

Winter 1993

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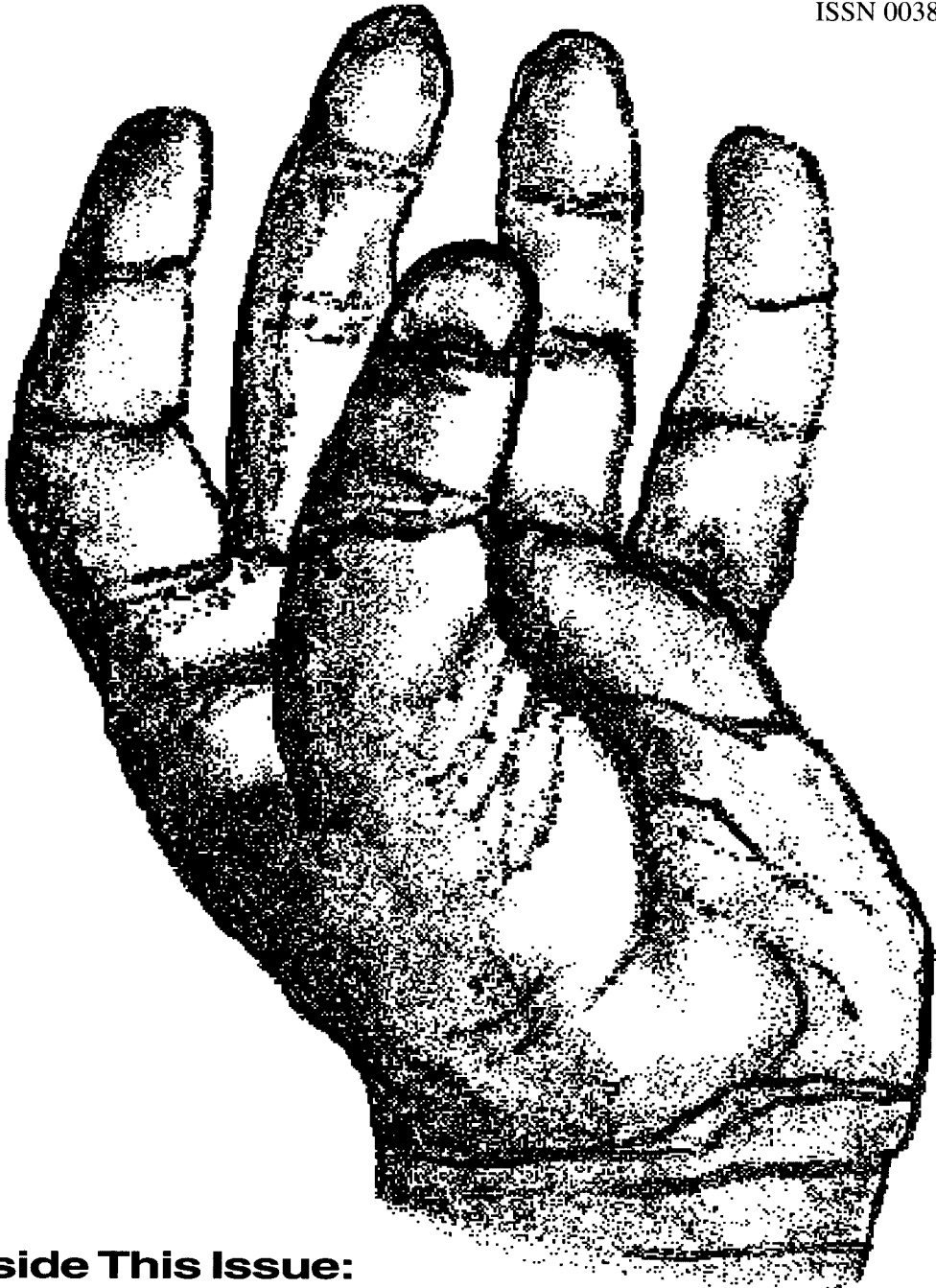
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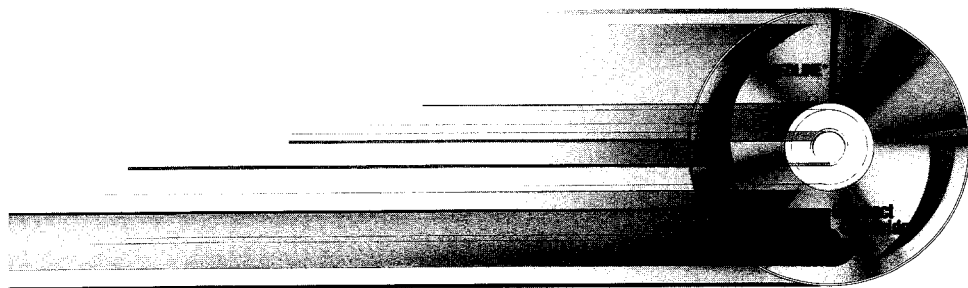
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- ◆ **The Ins and Outs of Developing a Database**
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- ◆ **1993/94 Candidates for SLA Office**

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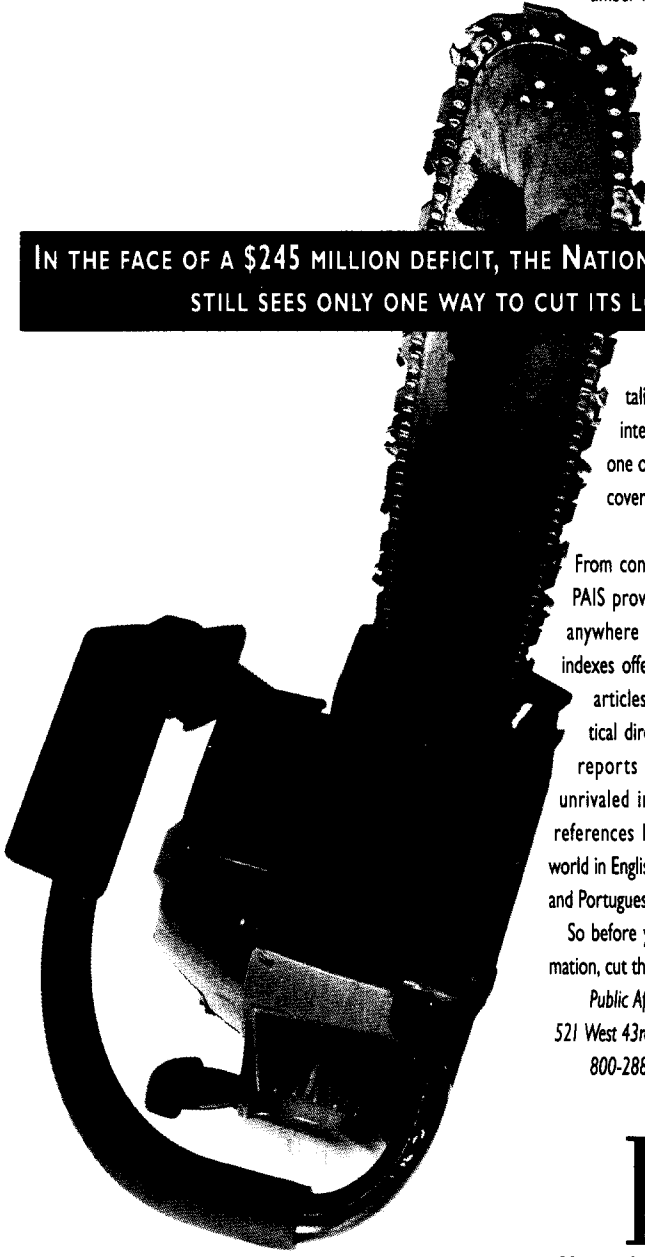
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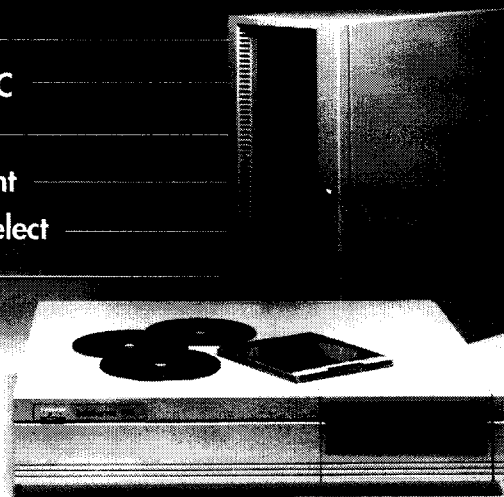
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# special libraries

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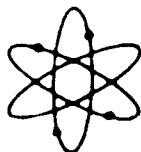
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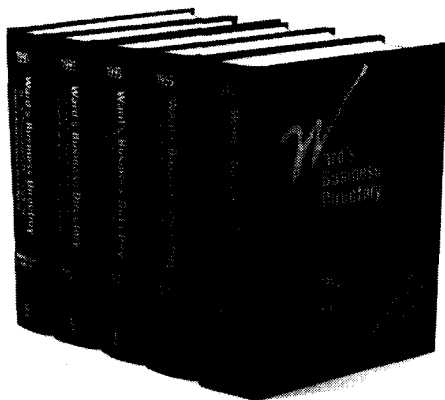
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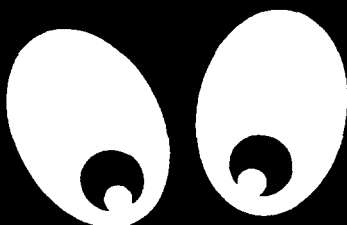
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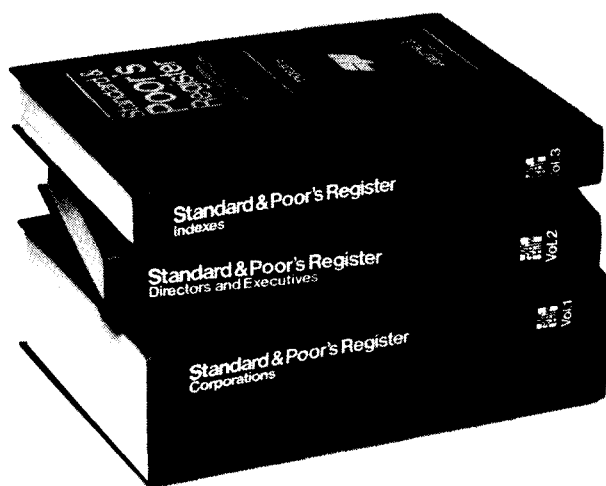


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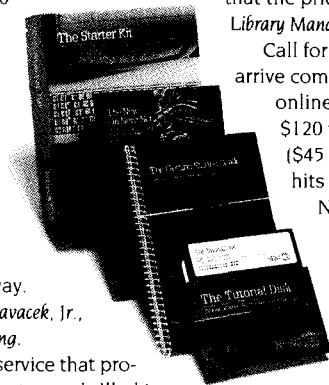
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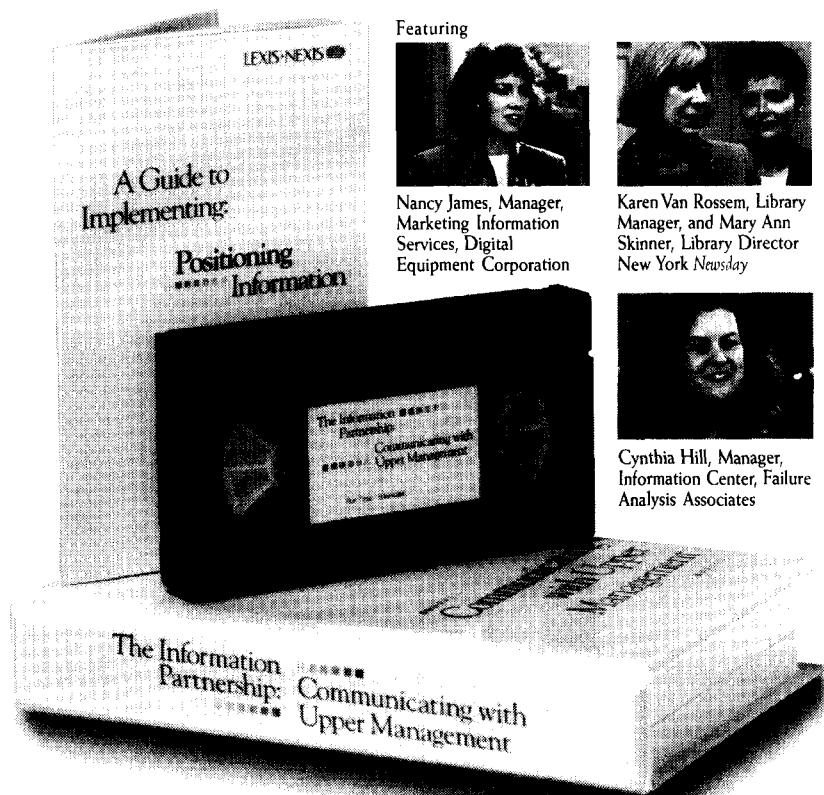
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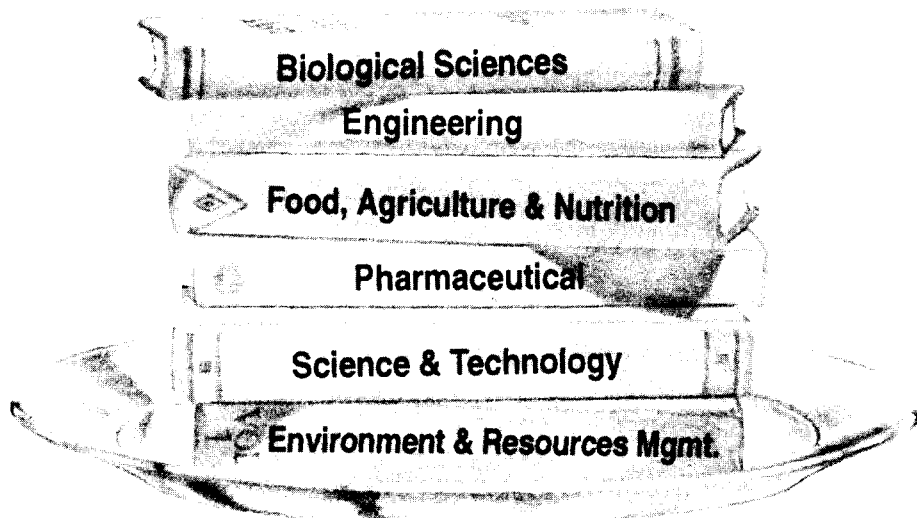
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# Subject Specialization in the Scientific Special Library

by *Beth Liebman Gibbs*

■ This paper was prepared as a master's thesis for the School of Information and Library Science at the University of North Carolina at Chapel Hill, March 1992. The study describes a set of interviews conducted with special librarians serving scientific organizations. Twelve special librarians from various sites in the North Carolina Research Triangle area were interviewed. Six subjects held an M.L.S. plus an advanced degree in the field in which they practice librarianship; the other six subjects had an M.L.S. but no formal science education. The researcher examined the differences in approach used by those who possess subject knowledge and those who do not. Facets explored include but were not limited to the ability to answer reference questions, provide special services, and the levels of personal power maintained by librarians in both groups. The researcher determined that although subject specialization is helpful in many areas, it is not necessary to provide good service in a scientific special library.

## Introduction

While frequently academic or public libraries may seek to attract professional librarians with a general base of knowledge, organizations with special libraries often believe the best possible service is provided when the librarian has specialized knowledge in the particular field. In libraries, subject specialization means the possession of sufficient experience or education in some particular discipline in addition to knowledge of librarianship.

This paper explores how subject specialization affects the special library and special librarian. It has been said that "a book is as good as its index." In an analogous manner, a library is as good as its librarian. A librarian's level of knowledge affects each aspect of library functioning. The impact of subject specialization on each of these aspects is often significantly different if the librarian has a comprehensive, rather than peripheral, understanding of the subject. Many would agree that

the most important predictor of good library service is a librarian with a strong knowledge of library science. In examining the role of subject specialization, the question investigated here is: What enhancement or special clientele rapport can be developed as a result of having an advanced subject degree? Literature on this topic is sparse, so personal interviews have been conducted with representative special librarians in the field. The information gleaned from these interviews will, it is hoped, support some tentative conclusions.

## Methodology

Twelve scientific special librarians were selected for personal interviews. Since scientific information is so specialized, and the benefits of possessing a subject specialization in the sciences have been emphasized in the literature, the scientific special library was chosen as an effective background within which to explore the influence of specific knowledge.



Most of the subjects were affiliated with the North Carolina Special Libraries Association; others were found by personal recommendations. The subjects were not chosen randomly. Six subjects had an MLS plus an advanced degree in the field in which they practice librarianship; the other six subjects had an MLS but no other formal science education.

## Research Findings

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**Non-subject Specialists.** The six non-subject specialists all have master's degrees in library science, but possess no specialized science education except for an occasional high school or college course.

When the non-subject specialists were asked about their first days on the job, the researcher expected to hear that they found it necessary to read many journals and examine a number of basic scientific textbooks to feel prepared to do the job. In fact, only one subject mentioned any preliminary reading, in this case a basic textbook. The subjects had differing reasons for feeling prepared without having specific subject knowledge. Interestingly, half of them had spent time during library school as interns at their place of present employment, so they were already somewhat familiar with the collection and its subject matter.

Two subjects discussed the fact that many of the reference questions they receive can be answered by employing basic reference tools, therefore, no extra preparation was necessary. One subject said, "I did very little, because I felt very confident about other sources that we use routinely here. Many of the questions that we get are cross-disciplinary or just require the use of standard reference tools that would be used in any situation."

The non-subject specialists were also asked to relate how they deal with special subject terms or jargon. All of the subjects admitted to having some problems when encountering the jargon of the field. "Sure, you always have problems with that," noted one subject, "even in a public library where the requests are general. You just have to admit when you don't know something." Every subject stated that most of the time they simply ask the client

what the term means. "It sort of depends on how I got the request. If a person is standing in front of me, I ask them what it means; if I'm not sure what it means but I've heard it before, I usually won't ask."

One subject explained that the way she handled this kind of situation depended on how she judged the character of the client. For example, if the client seemed abrupt and hurried, she would look up the term or ask someone else later. In general, it seems that jargon is expected, yet sometimes problematic for non-subject specialists. Although special subject terms can be time-consuming and uncomfortable, the outcome is usually satisfactory, and the question is frequently answered. One librarian said, "With an open mind, you learn it rapidly!"

But what takes place during that uncomfortable time, in the moment that it becomes apparent that the librarian doesn't understand the question that is being put forward to him/her? The non-subject specialists were asked to comment on whether or not they had sensed any impatience or negative feelings from their clients. All but one subject had. "What I get is sometimes a reluctance to give me the information that I need because there is an obvious assumption on the client's part that a) I won't understand what they mean, or b) I don't need to understand." The use of jargon came up again; the librarians sensed some negative feelings when they did not immediately recognize certain terms. "Yes, people occasionally imply that I don't know what I'm doing, but you go on and do the best that you can."

Subjects discussed the fact that certain people simply by their nature make them feel incompetent. "I can get a little intimidated, but you just chock it up to a person's approach to life. Some people are just like that—such is life." On the other hand, subjects mentioned that many clients are glad to discuss their research and explain their information needs, even if it means taking time and going into some detail. One librarian said, "A lot of times, people who come in here are really surprised to find out that you know anything at all about what they are talking about, so they are pleased that you have a general idea of what's going on. I've

never run into any impatience—most people are very happy to explain their research to me.” So although non-subject specialists run into impatient clients and negative feelings every now and then, the good experiences outweigh the bad.

Non-subject specialists were also asked if they sensed any sort of status discrepancy between themselves and their clients. All six subjects had encountered this at one time or another. A few subjects once again related this type of situation to the personality of the particular client. “Some people regard us as peers, others don’t—it’s a matter of individuals. You occasionally encounter someone who feels that you are a gopher, or doing clerical work.” Subjects mentioned that scientists look down on any type of administrative person, whether secretary, librarian, or office manager.

“I talked to a client the other day who was surprised I had a college degree, much less a graduate degree. I think that’s not an uncommon attitude.” The librarians interviewed seemed to feel that this sort of reception is a part of the trade; it is something they are used to confronting. It doesn’t appear to cause any outright negative feelings. On the contrary, I sensed that subjects felt challenged by these status discrepancy encounters. One subject stated, “People can be uncooperative, but on the whole, once people have decided to ask the question, they are probably going to be more open about receiving an answer. There are all those people out there that don’t even ask the question, and maybe part of the reason that this is the case is that they don’t think we can help them.” It was impressive that the subjects took an aspect of their work that could easily be disheartening and threatening, and turned it into something positive and challenging.

The last separate question asked of the non-subject specialists evolved from a personal experience of the researcher. Without specific scientific training, I interned as a biomedical online searcher. There were a few instances where I had taken hours to solve a small problem that any subject specialist would have solved very quickly. I found it terribly frustrating, and was curious to learn how it felt to this group to *know* what something meant, but not

to truly *understand* the underlying concept.

Once again, all the subjects had experienced this at one time or another. Some mentioned that they didn’t feel it was necessary to understand everything completely all the time. “I don’t really need to know the function of every part of the immune system to do a good online search.” A few subjects discussed the importance of user feedback in this situation. “You need the user to let you know that yes, you found the answer. I do searches where I really don’t know if I found what they want or not.” Another subject stated, “You’re not going to be on the same level of understanding as these people—you need to accept that, and not feel badly about asking for their input. People don’t expect you to have the same level of knowledge as they do.” The subjects were frustrated by the fact that a surface knowledge is sometimes not enough to answer a question fully, yet all realized that thorough knowledge is exceedingly difficult to acquire.

## Subject Specialists

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The kinds of degrees held by the sample of six subject specialists included Ph.D.s, registered nursing degrees, a pharmacy degree, and various second master’s degrees. All the subjects were working in areas in which they could directly utilize their subject expertise.

Subject specialists were first asked to discuss the order in which they obtained their advanced degrees and the motivation in each case. All six subjects acquired their master’s in library science degree *last*, after exploring various other educational and career pathways. As Blue<sup>1</sup> explains, many dual competency librarians go to library school because they are disillusioned or unhappy with their first choice of an occupation. This was consistent with this research group. In many instances, the subject had worked in his or her area of specialty for five to ten years before going to library school. The Ph.D. librarians had encountered serious career difficulties. The major research field of one subject specialist was slowly becoming extinct. Another was unhappy with current scientific research standards; library school became a way to

change careers, yet stay amidst a research atmosphere. Dissatisfaction appears to be the main reason that subject specialists exist. People are trained in another field and want to make a career change that allows them to build upon the knowledge and interest that they already possess. "I didn't have the stamina to stay in nursing my whole life, so I started looking around for some career that wouldn't be quite as grueling." Another subject states, "I decided library school would be a good degree that would let me use my previous knowledge." Librarianship created a career opportunity.

The order of the advanced degrees is a clear example of each person's choices and goals at different places in time. A few subjects had worked extensively in libraries or closely with a particular librarian who planted the concept of library school in his/her head. "I had spent a lot of time in libraries compiling bibliographies, and developed friendships with science librarians who encouraged me to go to library school—I needed some kind of profession to make money." Another subject found librarianship through career counseling. But in all cases, the subjects had invested a great deal of time, money, and energy into their first career choice. It wasn't until after actual experience allowed them to see that they needed another option that they looked to the library.

The subject specialists were also asked if they advertised their advanced degrees in any form. For example, one might list credentials on a business card, or hang a diploma on the office wall. Five of the six subjects do not advertise their degrees in any way. The subjects stated that they were "too modest" to do so. One librarian had wanted to list her degrees on her business card but was told that "the philosophy in the department here was that degrees were not on business cards, that no one had them, so I don't." However at the same organization, the clinical researchers *do* list their degrees on their business cards, implying that the library serves a lower status support staff function.

One subject with a long string of degrees that didn't quite correlate noted, "I don't have my diplomas on my wall because I'm a bit embarrassed by my career path. I've had a lack

of direction in my life, and I wouldn't want to make that more obvious." Another librarian with many degrees and a well-established reputation commented, "Even if I had a business card, I wouldn't put my degrees on them. People know me as a [specialist] and a librarian." Yet there was one subject who does proudly display credentials and diplomas. "Of course I put my diplomas on the wall, and I string my degrees out on my business cards. They put them up—why can't I? It's a common denominator, just a union card stating that I've gone through the hurdles. It's how you use the degrees that really counts."

In examining the client group, it was determined that in many cases, the subject specialist was more knowledgeable about the subject at hand than his or her client. Subjects were asked if their level of knowledge ever seemed to threaten their clients. All subjects were surprised at this question; it seemed that they had not considered the possibility before. Some librarians said that they pay special attention to the fact that they have more knowledge in some cases, becoming increasingly aware of the words they would choose and their overall demeanor in certain situations. "I don't present things in ways that would overwhelm someone. I try to communicate on a level that anyone would understand. Instead of using very specific subject terms, I will use the layperson's words."

In all cases, the subjects could not think of any cases during which their level of knowledge had threatened a client. "I've never encountered that. Most of my clients don't even know I have advanced degrees." It is possible that this in itself can explain the reason for the lack of client intimidation—most clients are not aware of the credentials of the librarians who serve them. (Remember the librarian who was told that degrees were not allowed on business cards? Perhaps even those who are eager to inform their clients of their knowledge are simply not able, in order to make the client more comfortable about seeking help.)

When asked about any special services the librarians' subject knowledge enabled them to provide, subjects had limited responses. Most said that because they were more familiar with

the subject, they could answer reference questions easier and more quickly. "I know the terminology, and I know what working in those settings is like. It really does give me an extra edge in answering some questions." And when it came to online literature searching, the librarians were able to tell what was significant or unimportant when searching within their field. Two subjects said that their advanced degrees enabled them to provide notable special services. One mentioned being able to identify certain plant specimens, and that clients often bring samples to be recognized. This subject also gives lectures and talks concerning a field of botany that few are familiar with. Another librarian is responsible for tracking the whole organization's research on a self-created database. The subject also reads many scientific journals, and sends researchers articles that the librarian is aware the client would be interested in. Clients are continually coming to this librarian for help with research dilemmas. This service would not be possible without a strong subject knowledge.

### **Aggregated Responses**

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For this section subjects were asked questions regardless of their educational background, to determine if there were any major differences between the two groups.

All of the subjects had been in their current positions from 18 months to 14 years. Information was obtained about salaries by using a check-off for particular range of possibilities. The reported ranges showed that an advanced degree made no clear difference in salary for this same group in any event. Some librarians with two master's degrees are making less money than other librarians who lacked basic college science courses. Of course, salary rates depend largely on the employee's institution and the length of time the person has been in place. Regardless, the researcher believed that salary ranges would be affected by educational levels in some manner. In general, they were not.

The subjects were asked how they prepared for their positions. Questions in this portion were focused on specific actions, like reading applicable material and attending academic

courses. It is not surprising that the subject specialists did not prepare for their positions by reading further scientific materials. A few of the subjects commented that they felt it necessary to look over their library science information. "I was already naturally keeping up with the medical reading, but I really had to bone up on the library science." The non-subject specialists had varied responses. As mentioned previously, some had worked as interns before beginning their full-time positions, so they were already familiar with the materials and the subject matter. Others browsed major subject dictionaries, examined leading terminology sourcebooks and standard subject tools, or perused primary journals in their fields. In general, the non-subject specialists did not spend a great deal of time reading in preparation for their positions.

When the entire group was asked about other ways in which they prepared for their positions, their responses seemed to have no ties whatsoever to their educational backgrounds. All of the subjects spent a great deal of time in commercial seminars like those offered by Dialog and BRS to hone online searching skills. Although the subject specialists had the education to understand the information retrieved by these searches, they needed as much training in this area as the non-subject specialists. Virtually everyone mentioned association seminars like those sponsored by the Medical Library Association or the Special Libraries Association as something in which they had participated quite often at the outset of their positions.

One non-subject specialist had a direct way of learning the ropes at her new place of employment. She made hour-long appointments with the director of each major laboratory at her facility. During the interviews, she discussed the particular section's information needs, and asked what she could do to help. "They were thrilled to talk to me. They welcomed the chance to explain their research, and mentioned ways in which I could aid them." Other non-subject specialists said that they had informal discussions with clients concerning the subject matter, perhaps by discussing the results of an online search, or

through an in-depth reference interview.

Subjects were requested to consider their personal level of subject knowledge, whether it had been obtained from education or experience. The main idea expressed seemed to be: I am comfortable with my level of knowledge, but there is always more to learn. "More subject knowledge would be very helpful if I had it, although my background in other areas compensates for a lot of things. But, there is always the need to learn more, and in a job like this that's one of the fun things about it—if you don't enjoy learning more, you don't belong in a library!" Another non-subject specialist adds, "It would be nice if I knew absolutely everything, but it's rare that I get a request that I don't understand." The subject specialists answered in the same vein, with some minor additions and variations.

One mentioned the fact that as a subject specialist and a librarian, it is necessary to keep up with two fields. "A Ph.D. is a very specific degree, so there's a lot that I don't know. You need to have a willingness to learn and a natural curiosity. But I don't feel as if I'm keeping up with my field [science] that well...But what is my field, [science] or library science? I honestly don't know. But as a practitioner, I have to keep up with the library science to give the best service. I need to be on top." Another subject specialist comments, "My field is so broad that even with a Ph.D. there's an incredible amount I don't know a thing about. In more specific areas, I just have to wing it. Certainly no one can be an expert on everything." So it seems that regardless of specific educational background, librarians feel confident in their level of subject knowledge and their ability to answer questions.

## Power

Questions were formulated from Kanter's "Power Failure in Management Circuits" to discover the level of power each individual maintained within the organization without revealing to the subject the question's purpose. It was expected that some distinction would be clear between the two groups, but responses were quite consistent from all subjects. Since

direct contact with money is often a measurement of power, the subjects were asked if they had any authority over their own budgets. All subjects reported that they had no direct power, except for the ability to make recommendations to a higher authority justifying what they felt was necessary. The subjects were also asked how many subordinates they had as another measure of power and responsibility in an organization. Only two subjects from each group had subordinates; the others did not. In the non-subject specialist group, the number of people being supervised was low: one half-time paraprofessional, and one full-time paraprofessional, none with any form of scientific education. The subject specialists supervised more people (seven to ten) and often supervised people with an undergraduate degree in the subject area serviced by the library.

Three other questions derived from Kanter's work received similar responses and yielded similar results. The questions were: 1) Do you feel you get cooperation in doing what is necessary for your library? 2) Do you feel you are invited to be a part of the decision-making process where your library/department is concerned? 3) Do you feel that you are truly contributing to the organization, included and appreciated as a member of the team, working toward the mission of the organization? Each question was answered in the affirmative by every librarian interviewed. At times, a subject would add, "except in some areas," or, "most all of the time, yet not always." But in general, all subjects believed they were important, effective members of the organization.

The last question relating to power within the organization addressed the issue of professionals doing non-professional chores, and if so, how often or for what reason. Half of the subjects said they did not do non-professional chores, or did so only by their own choice. One solo librarian said, "Some things are just more important than that, and the non-professional chores just don't get done." Another subject said, "I've made it a point in the last few years to cut down the amount of clerical work I was doing. I keep it down to a bare minimum; I feel very strongly about that."

Half of the subjects, three subject specialists

and three non-subject specialists, say they consistently do non-professional chores. The time amounts varied, from one to two hours a day, to one full day a week. "Either I benefit from it, like sending out SDI results and scanning the articles, or I can do it faster than someone else." These subjects repeated that one cannot get away from doing non-professional chores—they see it as part of the job. One subject stated, "Everybody does non-professional chores. Until you are Lee Iococca, that's the way it is."

As one can see, the results of the section relating to power are not distinctive to either subject group. The similar responses lead to the assumption that the subjects all felt powerful within their positions, regardless of their specific subject knowledge.

## **Final Generalizations**

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To conclude the interviews, subjects were asked to make some generalizations. They were first requested to comment upon the following quote:

Without knowledge of the field in which clients are doing work, librarians may be limited to a clerical role—custodians of material.<sup>1</sup>

This question produced the most disagreement among the subjects. Five of the 12 agreed with the quote (three non-subject specialists, two subject specialists); all noted that by "agreeing," they meant they found the statement plausible. "It could happen. People come in and ask a question, and they assume you know what you are talking about. If you occasionally ask the slightest little question, they assume you know nothing, and go to the other extreme. Then you are treated like a secretary. It could happen—and it does." Other subjects felt that the possibility of becoming a "custodian of material" was in their hands; "That will happen if you don't push yourself to learn." "I think that's true. You just can't move into a place and recognize the clients' information needs and maintain ignorance and expect to be anything more than a clerk." The same subject

specialist continues with an interesting distinction: "But the quote did not say 'prior knowledge.' Prior knowledge is not essential, but knowledge is."

The subjects that disagreed with Blue's quote did so quite strongly. Once again, this group is made from a mixture of the two sides, three non-subject specialists and four subject specialists. A typical comment was, "I disagree completely. Knowledge of the indexing system is much more important than knowledge of the subject matter. We're here to help our clients access the information, not interpret the information." Many of the responses from the subject specialists echoed that statement: our job is to find it, not know it. "I see our role more as a conduit between the person who needs the information and the information."

Finally, the subjects were asked to free associate about specialization, to discuss how relevant they felt it was, and give any further comments.

The non-subject specialists had similar answers. One subject offered: "I think an advanced degree in a subject specialization is helpful, but it is very difficult to have a complete knowledge of anything, so although it is helpful, I don't think it is ever essential." Other statements were: "Everything is getting so specialized that even a specialist isn't that knowledgeable these days." "Most importantly, a librarian must have liveliness, an aggressiveness, enthusiasm, and the desire to keep learning." Another subject stated it in this manner: "I think it's very helpful, sometimes necessary, not always necessary, but always helpful."

The subject specialists seemed almost to discount their level of knowledge. As a group, they stated more strongly the case that a subject background is not crucial. "Supervising personnel is the hardest part of my job. All the subject specialization in the world isn't going to help me with that." "I think that this idea that you have to have a subject background to work in a science library is highly overrated, especially from the standpoint of actually running a library." "I believe that you can do this job without an advanced degree—it's helpful, it can save you time, and it gives you a step up, but anyone can learn it." At the same time, they

noted that library politics gave an advanced degree some extra weight. "I've gained some visibility from my subject background." "It adds a lot of mobility to my field—it's easier for me to go up."

## Summary

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In conclusion, it seems that an advanced degree in a subject specialization can create advantages in many ways. It can establish a job opportunity, save time, construct political privileges, and make it easier to answer a reference question. Yet in many areas, it has no effect. The subjects illustrate that the information necessary to do a good job can be learned,

absorbed, or conquered. A librarian with a subject background can provide better services in some areas, but these areas are quite narrow—and getting smaller as knowledge becomes more specialized; in many cases, it appears not to be that significant. One of the most interesting findings of this study was the subject specialists' intense conviction that their advanced knowledge was not necessary to their jobs. All subjects expressed equal feelings of effectiveness and power within their positions. All subjects were compensated fairly and treated with a basic level of respect, and most importantly, all were comfortable with their level of subject knowledge. ■

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## Acknowledgements

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# Developing an Inhouse Database from Online Sources

by *Deborah Smith-Cohen*

■ Development of inhouse databases for direct user access is not uncommon now, whether its purpose is to organize proprietary internal information, enable customized access to external publications, or a combination. This article documents the creation of a database of citations in a narrow subject area from commercial databases, with customized added indexing, for access by end-users. Projects like this can be powerful tools that contribute to an organization's effectiveness and validate the librarian's expertise, but they are complex, expensive, and time consuming. The following saga of one such database project may offer insights to others beginning or considering such an effort.

## Introduction

In September 1989, the U.S. Army Corps of Engineers Cold Regions Research and Engineering Laboratory (CRREL) accepted a contract to conduct appropriate searches and produce a bibliography of arctic wetlands research in database form suitable for use by regulatory staff at the Corps of Engineers, Alaska District. The original statement of work was "to establish a bibliography of biological, environmental and physical aspects of arctic wetlands [in database form]" and "to search, collect, catalog, index, review, and synthesize existing literature on arctic wetlands." It specified the following products: a custom indexed database tool suitable for use on a PC or compatible, a complete printout of the bibliography, hard copy or microform equivalent for all citations identified, and a user manual for the resulting database, as well as a technical review to be done by a CRREL researcher. The original estimate, by the Alaska District was that there might be up to a thousand such citations, most of which would already be in the CRREL collection; January 1, 1990 was established as a due date for initial products.

## Planning

An initial plan was laid out with target dates as follows:

1. Confirm the scope of coverage needed. Choose test search terms using relevant glossaries, thesauri, and textbooks, as well as insights from the technical reviewer. Use these terms to determine databases to be searched. Run searches to test search strategy. Review sample "catches" and revise strategy as appropriate (late September early October).
2. Search and download citations from selected databases to disk in tagged or nearest equivalent form as well as to paper (October). [I was on vacation for part of October.]
3. Import citations to suitable database program and edit out bad hits and duplicates (early November).
4. Begin to gather hard copy and micro-



form copies of citations, starting with those inhouse (early November).

5. Finalize controlled index terms and add to database (mid–late November).
6. Make additional changes as necessary for uniform author structure, etc. to ease searching (late November–early December).
7. Test resulting database for smooth functioning and searching (early December).
8. Prepare user manual for database (mid-December).
9. Produce disk of completed database to be sent to Alaska District along with formatted printout of same (late December).
10. Order citations not contained inhouse (late December).

We knew this was a tight, optimistic schedule but didn't realize yet how optimistic, since it was based on an untested estimate of the number of relevant citations.

### **Identifying Search Terms and Databases**

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Preliminary search terms were identified using the thesauri of the Bibliography of Cold Regions Science and Technology (a product sponsored by CRREL and prepared by the Library of Congress that is available in print, on the Orbit online search service, and in CDROM), and the American Geological Society's Georef (available on DIALOG and Orbit), as well as the Glossary of Vegetation and Landforms in Alaska and other handbooks and glossaries. A core set of these terms was tested in Dialindex (411) on DIALOG and the Data Base Index (DBI) on Orbit to identify databases with the most uses of these terms. From these lists, a set of 12 databases to be searched (from both DIALOG and Orbit search services) was determined. We discovered that the Alaska District considered all

tundra research relevant for the purposes of this bibliography.

Very preliminary searches were done in each database. I made a table recording terms and frequency of use in each database to determine "must use" and "marginal" terms. My list of terms was revised and passed by several CRREL wetlands researchers. Sample citations from the test searches showed indexing terms used (not just terms appearing in titles or abstracts). These terms were added as appropriate. For instance, in one database the only indexing close to the term wetland was "aquatic environment," so it was added to the list of terms to be searched.

Based on these early searches I knew our sets were going to be larger than expected, so I reviewed interest areas and their prioritization with the contract monitor at the Alaska District offices. These included citations on the "functions and values" of wetlands (such as habitat, food, hydrology, economic development, climate control, and water quality), on human and natural impacts and their mitigation, on wetland management and legislation, and on wetland classification and delineation. Finally, a formal search strategy of some 30 statements was designed for each search system (with some modifications for specific databases), and these were typed in and saved permanently then executed to get counts of overall hits and hits by interest area for each database. Sample citations were printed from the "remainder" set of citations which included primary search terms but no interest area terms, so we could also analyze the characteristics of marginal hits.

### **Reality and Revisions**

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The search came up with over 50,000 citations! While this obviously included duplicates and bad hits, it was clear that some narrowing of scope was necessary, and that our original estimates of time and cost were way off.

After we discussed these concerns with the Alaska District, the set of search terms was narrowed and ten databases prioritized for searching. Interest areas were used to organize downloading and further limit capture. It was

also agreed that the due date for the finished products would be left open for future revision based on actual citation counts after restriction of the project's scope.

## **Downloading Citations**

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Over the course of the next month (November) about 12,000 citations were downloaded to disk and printed on paper in tagged form or closestequivalent. The revised and saved search strategies were executed in each database. Citations were printed for electronic downloading in 50 or 100 citation clusters depending on the length of records, and when downloaded to disk were also printed to paper. Using Dialmail prints and Orbit's "print electric" options is less expensive than in-database printing and allows both paper and disk acquisition of records. By downloading in clusters I could import citations into the database software in manageable chunks and control the risks of faulty transfers. Having a paper copy did add to the cost of the search but eased review for relevance, provided a backup and allowed me to loan printouts to the technical reviewer as well as offer disks of the data.

Ongoing logs of costs, of databases searched to date, of citations sent for electronic print, of disks and files, and of paper printouts were kept to document and keep control of this process. By the end of November, ten boxes of filled disks and a five foot high stack of paper stood ready for review and importing.

## **Pro-Cite**

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The initial medium of the database would be Pro-Cite from Professional Bibliographic Software, Inc. Pro-Cite lets you create bibliographies of various media in separate formats called workforms and print them using many standard citation formats (such as Turabian). Custom workforms and citation formats can also be created. It offers fairly sophisticated searching and editing capabilities and has a duplicate search function which proved a tremendous boon. Companion software called Bibliolink is available for importing tagged citations downloaded to disks with minimal

fuss. We already owned all packages although we purchased upgrades of Bibliolinks for DIA-LOG and BRS (which accommodates Orbit as well). We had not determined what software the final database would be in but expected to convert it to something which would be easier for a novice computer user to learn and use.

## **Importing Tagged Records**

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Procedures for importing and reviewing downloaded citations were devised and implemented. A custom workform (field structure) was designed to hold all citations. Because I expected to convert the final product again, it seemed prudent to begin with a single standard field structure, rather than using Pro-Cite's variable format workforms. Fields included the accession number, title, author, source, language, indexing, and abstract fields from each database as well as additional relevant fields for specific databases such as added indexing fields in NTIS. Only accession numbers for the Cold database and NTIS were kept in the final product since they provide acquisition information. However, during the process of reviewing citations, the structures of accession numbers, author names, and language codes helped identify sources when deciding which of two or more duplicate citations to keep. A notes field and controlled indexing field were included in the workform for manual entries during indexing.

Citations had been downloaded in 50 or 100 citation clusters and were imported and edited in those sets. Editing consisted of reviewing each citation from the printout and marking for deletion those that weren't relevant based on a mutually established list of exclusions, e.g., paleogeology studies and industrial applications of peat. Instructions for the mapping of tagged fields to Pro-Cite fields had to be respecified for each database. A log of additions to the Pro-Cite database was maintained throughout to show which downloaded files had been imported on which days, how many gross and net citations were added to the database from each set, and notes on any exceptions encountered. Printouts were also annotated to show which citations were deleted.

Backups, done twice a day, grew to fill over 20 disks and took about half an hour at a time.

After each database was completed, the Pro-Cite duplicate search function was used to identify potential duplicate citations. These were reviewed individually. Citations were considered to be duplicates if the title, author(s), date, and source were identical, so occasionally a conference paper, dissertation, or technical report is included as well as its later journal equivalent. Some discretion was necessary in interpreting varying translations of titles and varying transliterations of Cyrillic authors' names. Preference was given to a full English translation of a foreign language article when found in both forms, e.g., articles from *Pochvovednie* and from its English translation *Soviet Soil Science*. Duplicates were reviewed and deleted using an established hierarchy of which database's records were to be preferred, based on quality of indexing, presence of abstracts, and presence of acquisition numbers.

Near the end of this process, Pro-Cite reached its maximum size limit for a single database. Citations not in English and without an English summary were transferred to a second database. The remaining citations were imported to the primary database and then, after initial review, transferred to the non-English segment as appropriate. Since the resulting primary database still included over 6,000 citations at this point, it was agreed that the current custom-indexing effort would have to be limited to this segment. The non-English database (some 2,800 citations) was left behind but not deleted.

## Management Interface

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Bimonthly progress reports kept the contract monitor at the Alaska District informed and solicited his and his colleagues' approval or comments on proposed process decisions. These included progress to date, plans in brief for accomplishing the next phase of development, and recommendations and rationales for decisions to be made concerning database choices, indexing terms, software purchases, etc. In the interim, occasional phone calls

confirmed decisions made. At one point, the Readout volcano's eruption rapped our contract monitor outside of Alaska for nearly a week while a memo outlining the proposed custom indexing terms waited on his desk.

## Custom Indexing

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In the midst of importing, several hardware and software problems came up. While none were major, getting them corrected often took several days, resulting in the loss of perhaps 14 days of inputting in December and January. During these forced breaks, further research was done on controlled indexing, and on the final database software for the product. Two broadly used and recognized indexing schemes were chosen to cover wetland type and wetland functions and values, both from the Fish & Wildlife Service. Custom indexing of Alaska regions used the Corps of Engineers' own regional divisions. However, original indexing terms had to be chosen for the treatment areas: impacts, mitigation, management, legislation, and classification.

Beginning the custom-indexing meant establishing new review and documentation standards. Scope notes for each term were either gathered or created and annotated with experience to ensure consistency of application. It seemed that the most efficient way to review citations was to construct broad searches for citations that might require each index term, and then review individually and annotate as appropriate the resulting sets. Pro-Cite has fairly sophisticated search capabilities, although the search time for this still-large database was 15 to 20 minutes for each search.

Construction of searches meant another research effort into thesauri, handbooks, dictionaries, and encyclopedias. For example, the search statement for the indexing term [habitat-fish] was [fish\* or pisc\* or salmon\* or trout\* or antherin\* or placoderm\* or perci\* or pleuron\* or scorpa\*]. By documenting the search statements used and counts, we could evaluate, revise, and repeat selected searches in the future if necessary. The counts gave me and the technical reviewer a sense of the balance of coverage of specific areas. (I was at

this time also periodically executing searches and transferring citations across a lab-wide network for the technical reviewer who imported them into a textbase called Ize [published by Persoft Inc.] for his own use in preparing the review.)

The indexing process stretched from early February into April, pushing the limits of the revised due date to July 1990. Toward the end, the decision had to be made to curtail more detailed indexing and just be sure that priority indexing of geography, wetland type, and functions and values were done. Complete indexing of wetland treatment terms in about 600 records would have to wait for a future contract.

### **Final Software—Inmagic**

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Ten criteria for the final database software were established:

1. Must be PC-based.
2. Must cost less than \$2,000 for all required software.
3. Must be able to handle >10,000 records of 2K each.
4. Must efficiently search long fields, e.g., long index fields and abstracts.
5. Must be able to import ASCII delimited output files created by Pro-Cite without extensive pre- or post- processing.
6. Must be easy for end-users to learn and manipulate. Criteria might include context-sensitive help screens, intuitive key assignments, logical and complete manual, telephone help line. (The only computer experience of most of the primary users was basic word processing.)
7. Must be able to process inquiries fast —i.e., the user must not feel hampered by search speed.
8. Must allow for Boolean searching, preferably including >, <, and = relations.
9. Must be able to do field searches, not just full text searching.
10. Must provide for simple but flexible report generation.

Inmagic, Searchmagic, its companion menu-driven search software, and Multi-adapter, a conversion program about to be released, were chosen. All are published by Inmagic, Inc. Aside from meeting the ten criteria above, I had already worked with the software and that advantage, given time constraints, was an important consideration. I reviewed software using articles from *Database* magazine and reviews in the CD-ROM Computer Library which contains full text articles from a core set of leading computer-related journals, and abstracts from many more journals.

The fast approaching deadline forced me to persuade Inmagic to sell me Multi-adapter before its public release and an unforeseen variant in Pro-Cite's ASCII standard required some fast-patch programming (Pro-Cite's delimiter was a carriage return, while the Multi-adapter required a carriage return and line feed between field values) and delayed the completion of the importing process for a nerve-racking week, but resulted in a working product with just three weeks to spare (Pro-Cite's new release 2.0 includes a customizing tool to add a line-feed, so this problem no longer exists). Using the Multi-adapter required setting up detailed conversion instructions indicating which fields in the Pro-Cite database were to be mapped into which fields in an Inmagic structure. It created a unique record number field for each Inmagic record, and it offered other options for adding subfield delimiters to separate indexing terms, altering punctuation, splitting Pro-Cite field data to put it into two or more different Inmagic fields, etc.

Learning the codes and testing the conversion instruction file took a couple of days, and some assistance from Inmagic's telephone help staff. Running the program, after addressing the ASCII problem, took over eight hours and actually creating the Inmagic database from the Multi-adapter's output file took nearly 24

hours, due to the size of the database and the large size of each record, since each word in most fields had to be indexed for retrieval.

Once the Inmagic database was done, the Searchmagic menu interface had to be set up including a help screen with a general description of the database's purpose and structure as well as tips on searching. The structure of the Inmagic database, and the fields to be searched in each area had to be designated in a special file. I defined four search areas, title, author, descriptors (inherited indexing terms and words in abstracts), and subjects (controlled, custom indexing terms) to be available for menu-driven searching from the Searchmagic front end.

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## Manual

A search manual was written and tested on the technical reviewer and library staffers. The database itself was also tested and typos in indexing fields and date fields were fixed. A presentation was prepared with appropriate transparencies for the lab staff at CRREL. This presentation along with an individual raining plan for interested users was brought to Anchorage, along with the working product, to deliver to the Alaska District.

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## Reflections

Before accepting the contract terms, we should have executed a test search to determine if our scope and size expectations were accurate. This would have helped us establish a more accurate timeline and would have prepared all parties better for the true costs. We also should not have agreed to a deadline that included no time for delays or technical problems.

The database currently exists in effect as a closed file. The notes I maintained on plan-

ning, progress to date, exceptions encountered, and how or whether they had been addressed will be invaluable when the database becomes an ongoing project and maintenance procedures need to be established.

Maintaining good communications among all parties was critical to accomplishing this project. This included educating the Alaska District on the demands of such a project without forcing them to become database planners themselves, and understanding the extent and limits of computer experience among the regulatory staff user population. Internal communications among the library manager, the technical reviewer, the directors of the information management and research divisions, computer services staff, and myself were essential. Without knowing and understanding each other's objectives and requirements, we simply could not have delivered the product in the time available.

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## Conclusions

Building large, custom databases and doing custom indexing of them are demanding and expensive activities. However, the tools exist to make powerful, flexible, custom databases available to in-house users. This paper presented the process used to create one such database. The software packages used (Pro-Cite, Bibliolink, Inmagic, Searchmagic, and Multi-adapter) were all well-designed, well-supported, and well-adapted to the task. By far the greatest effort demanded by this project was not the logistics of searching, downloading, transferring and documenting—rather, it was preparing custom-indexing schemes and applying them to widely varying records in a consistent and useful way. This will also be the greatest challenge in maintaining it. ■

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## Acknowledgements

My thanks go to Nancy Liston, Library Manager, CRREL, for giving me this challenging project. Also, Pro-Cite and Inmagic help line staffers were incredible! They knew their products, understood my project—and my occasional terror—and came through with answers I could count on, even if they weren't always the ones I wanted to hear.

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## Appendix A Final Time Line

September 1989	Original scope of work contracted.
October 1989	Initial search terms determined. Test searches done. Revision of terms, scope of interest.
November 1989	Online searches done. Citations downloaded to disk.
December 1989 - February 1990	Citations imported into Pro-Cite. Duplicates and non-relevant citations deleted. Custom indexing terms determined. Final software selected.
February - May 1990	Custom indexing of citations done.
May - June 1990	Citations converted to Inmagic. Final editing and revisions of citations. User manual and training plan developed. Trip to Alaska to present database and train users.
July 1990	Complete printout of citations prepared. Acquisition of selected citations begins.

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## Appendix B Final Product Overview

Scope;	Government, industry and university research on northern wetlands phenomena, including their biological, environmental and physical characteristics, their management and their regulation, identified through searching commercial databases and some (limited) independent research.
Size:	5,000 citations. Over 1,000 citations on Alaskan wetlands.
Lang.:	Texts in English or with English summaries.
Software:	Inmagic and Searchmagic
Searching:	Citations can be searched by author, title, keyword, and controlled subject indexing in the menu-driven search mode. More complex searching can be done through a command search mode.
Costs:	\$15,000 staff time 10,000 searching 2,000 software, 2,000 for my travel to Alaska, <u>1,000 other materials (disks, paper, postage, etc.)</u> \$30,000 TOTAL (This excludes future costs for acquisition.)

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## **Appendix C      Table of Contents of User Manual**

### **Introduction**

- Overview of Subject Coverage
- Background on Creation of Database
- Overview of Counts
- For Further Information

### **Searching**

- Getting into the Arctic Wetlands Database
- Definitions of Search Area Prompts
- Searching for Citations by Browsing Indexes
- Searching for Citations by Typing in Search Statements
- Truncation
- Searching for Citations using Subject Indexing
- Complex Searches

### **Displaying and Printing Results**

- Displaying Results on the Computer Screen
- Deleting Irrelevant Citations
- Printing Results to Paper
- Printing Results to Disk

### **Inmagic Command Searching**

Appendix A: Online Databases Searched

Appendix B: Search Terms Used for Online Searches

Appendix C: Subject Indexing — Sources and Use Notes

Appendix D: Subject Indexing — Counts by Term

Appendix E: Descriptions of Fields in Database

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## **Appendix D      Developing an Inhouse Database: Hindsight**

1. Develop clear, complete, and commonly understood objectives among all interested parties, staff and users.
2. Know the computing experience and expectations of the user population to be served. Design database structure, make software and hardware choices, and prepare training accordingly.
2. Test all assumptions about database size and coverage in terms of what is needed, what is available, and what is possible.
3. Establish realistic estimates of cost and time demands. Leave room for “extras.”
4. Do not expect to add custom indexing without a significant investment of staff time and expense.

5. If a contract for work is involved, define all terms used in the contract, including terms you may think are commonly understood, e.g. user manual.
6. Don't forget to plan for clean-up and "quality control'." Standardizing the formats of titles, author names, and coding (such as language codes) will take time, but make a significant difference in searchability and overall quality.
7. DOCUMENT EVERYTHING!!
  - Plans
  - Policies
  - Processes
  - Exceptions
  - Progress
  - Projections
  - Time & Costs
  - Results

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### **Note**

The use of company or product names herein is for identification purposes only and does not imply endorsement by the U.S. Army Cold Regions Research & Engineering Laboratory or by the U.S. Department of Defense.

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# **The Carnegie Mellon University Library Information System (LIS): Applications within the Software Engineering Institute (SEI) Online Environment**

*by G. Lynn Tinsley and Karola M. Yourison*

■ The Carnegie Mellon University Library Information System (LIS) services the university libraries as well as the Software Engineering Institute (SEI) Library. This paper will describe the features of this new innovative library system and talk about the online capabilities of the SEI Library and how LIS is used by the SEI Library staff and SEI Library patrons.

**T**HE SOFTWARE ENGINEERING INSTITUTE (SEI) is a federally funded research and development center sponsored by the Department of Defense under contract to Carnegie Mellon University (CMU). The institute employs technical staff of approximately 200 members. Communication at the institute is based on local area networks, electronic mail, and electronic bulletin boards. Each employee has access to a terminal or workstation which is connected to the local network. As part of Carnegie Mellon University, the SEI is also connected to the university computer network through the Internet.

To support the information needs of the technical staff, the SEI Library was established. At the initial planning stage a decision was made by management to create a fully automated library. This decision is in line with the research of the institute whose goal is to promote a software engineering discipline. Campus library facilities in place were already highly automated; therefore, the SEI Library

decided to utilize this technology to its advantage. Thus, a special relationship between the SEI Library and the CMU Libraries began in 1986 and continues today.

CMU library services available to the SEI include acquisitions, cataloging, and document delivery. Through cataloging, the SEI library materials are included on the Library Information System (LIS), an online retrieval system developed locally for the CMU Libraries. Access to the university's library system is available to all SEI employees from their desktop. Employees are encouraged to utilize the online system for information retrieval. Library orientation is in place to accommodate new employees, visiting scientists, and resident affiliates to become knowledgeable about the features of LIS.

The focus of this paper is to profile the features of the LIS and how it is utilized by the SEI community. Electronic mail applications, online request forms, file applications, and current awareness capabilities for the SEI community

will be highlighted. A brief history of the LIS and the newly developed system LIS II, (the Mercury Project electronic library prototype under development at CMU) will be discussed.

## **CMU Automation Background**

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The Library Information System (LIS) is a locally developed and maintained information retrieval system. This system supports the teaching curriculum and research projects of the community and is accessible from offices, dormitories, libraries, and off-campus sites providing standard library catalog information, commercial databases, and campus information.

Development began in 1985 based upon available hardware and software on campus. Criteria essential to the building of the retrieval system included the design of a single search interface for different types of information (each database having the same search protocol) and several optional terminal interfaces to enable the widest campus distribution possible. The Carnegie Mellon community uses an array of computer terminals, workstations, and departmental computing systems. This variation in equipment posed a considerable technical challenge to introducing campus-wide compatibility. The first version was released to the campus in the Spring of 1986.

LIS was a centralized system housed on an IBM 3083 mainframe running IBM STAIRS retrieval software. At the time of its replacement by LIS II, the system contained 15 databases including an online full-text encyclopedia and dictionary, local library holdings (CMU libraries, SEI, and the Hunt Institute for Botanical Documentation), and a variety of vendor databases loaded from magnetic tape such as INSPEC and the Information Access Corporation products. Local campus information was also made available in Who's Who at CMU, an online version of the CMU faculty, staff, and student directories. Full Boolean searching capability was supported with the default operator set at "and". Some system features included set limits and sorting, mailing of single records, and help screens at all levels. To access LIS from a non-library site a user i.d. and password were required. Authen-

tication was set up to protect database licensing agreements. Online registration and notification of user passwords were tied to the campus electronic mail networks.

LIS II, the second generation, was released in test version in the CMU Libraries for the campus in the Fall of 1991 and is the first release of the information system developed by the Mercury Project. (The Mercury Project is the electronic library prototype of the future currently being developed at Carnegie Mellon. The project team consists of members from various units across the campus and is funded by internal and external sources.) It is a distributed system running on multiple servers currently using Newton, a software product from OCLC, as its retrieval system. Two user interfaces have been designed with the first release, a graphic user interface on a terminal emulation based on Curses. The type of computer in use dictates which interface a user may access. The Motif user interface can be accessed by workstations running the X Window System. The VTI00 user interface is accessible from a variety of machines including Macintosh and IBM computers. Both user interfaces have been designed for ease of retrieval and accommodate features such as copying and pasting text, marking records, saving records to a file, mailing records, and limiting and sorting records. Authentication is necessary to log in and use all of the available commercial databases on the system. The system is distributed over Andrew, the campus network.

The project design followed the 239.50 standard as well as the Motif interface style guide. The distributed system is very different from the LIS mainframe design and provides cost effectiveness, reliability, and the feasibility to add databases as needs grow.

Existing workstation technology at the SEI will enable technical staff to access the Motif user interface, so for purposes of this paper, the following discussion will illustrate this interface. See figure 1 for a sample Motif search window.

The Motif interface involves the user in a series of button, menu, and window features selected by the mouse. The left mouse button is used for most command selections. The system

features three windows, the Search Window, Records Window, and Browse Window. Full Boolean searching capability is supported with the default operator set at "adj." The truncation symbol is -?-.

To begin a search session, first select a database option from the SELECT menu displayed at the top of the Search Window. LIS II defaults to the CMU Library Catalog if no database is selected. In figure 1 the search string "software engineering" has been entered, the search button activated, resulting in a set of 642 records. To view those records the display button must be clicked, or the mouse button double clicked, when the result set is highlighted. The Records Window (see figure 2) will display the first 100 records retrieved. You may move up and down the list and click on records of interest. At the bottom of the Records Window buttons are available for selections. At the top of the Records Window menu options are also available for selection. These menu options include the printing, saving, mailing, and marking of records.

A unique component of LIS II is the Browse Window. This is used to select keywords that appear in the databases to facilitate the search strategy. Each database is made up of multiple indexes created by the extraction and ordering of keywords from the source records. These indexes can be browsed in this window by using words, word stems, or phrases. A term may be browsed in all indexes or in specifically selected indexes, (i.e., author field index, title field index, notes field index, etc.). This window is selected by using a button option in the Search Window.

Searches may be refined by selecting the various choices under the Limit and Options menus in the Search Window. Help is available under all window selections. On the Options menu, a Commen/Bug Report function is available. This function facilitates the opportunity for user feedback.

The evolving environment of LIS II is an educational as well as a research adventure. Future LIS II objectives include offering full-text document images, enhanced cataloging of monographs, and adding locally-produced databases. Providing workstation users with the ability to customize the interface to their own

needs is also envisioned. The Mercury Project long-term goals embody expanding the breadth and depth of information conveyed by LIS II; studying user behavior patterns affected by LIS II; and addressing concerns within the electronic publishing industry.

## **SEI Library**

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### **Electronic Mail**

The SEI librarians and all SEI personnel connect to LIS using a simple command "library." The CMU Library catalog and the INSPEC FILE are the heaviest used databases. Databases such as the Periodicals Index, the Computer Database, and the Academic American Encyclopedia are also very popular.

A few years ago, library automation staff enhanced the online retrieval system by adding a "mail" feature which is available on all databases. Any patron searching the system can mail a record to himself via electronic mail. A simple command "mail" sends the record to the patron's account. The system even puts in the default address after the first initial search making it unnecessary for the patron to retype his electronic mail address. Within minutes, the mailed record is available at the patron's desktop. The same record (message) can be forwarded to the SEI Library for a book or article request. If the request is from the university's library collection the record is used again through electronic mail for a book loan or for a copy of an article. The SEI librarians communicate with their campus colleagues mostly via electronic mail. To assure fast delivery of the requested material, a daily courier service between the SEI Library and the university libraries was established. Another very useful application is the posting of an online catalog record on the electronic bulletin board if a book is missing from the library shelves. Bulletin boards are read frequently, and many books have been returned within minutes after the post.

### **Online Request Form—Librequest**

Since most of the SEI Library's communication is through electronic mail, the SEI librarians developed the online request form or

Figure 1

Search Window

File Edit Select Limit Options Help

Searching: CMU Library Catalog waikala.mercury.s

software engineering

Type keywords and press Return. The default operator is ADJ.

Search Use Set Clear Browse Display

Set #1: software adj engineering  
642 records: CMU Library Catalog

Figure 2

Records Window

File Edit Mark Titles Help

Set #1: software adj engineering Record 63/642

60)	1991	Coad, Peter.	Object-oriented design / Pet	Book
61)	1985	Staa, Arndt von.	Requirements for software en	Book
62)	1984	Freeman, Peter, 1941-	Analysis of the Draco approa	Book
63)	1991	Endres, Albert.	Software development environ	Book
64)	1991	Banatre, Jean-Pierre.	Prospects for functional pro	Book
65)	1991	Garlan, David.	Formalizing design spaces :i	Book
66)	1989	Sunazuka, Toshihiko.	Integrating automated suppor	Book
67)	1991	Schutzer, Daniel, 1940	Business decisions with comp	Book
68)	1989	Hultman, Johan.	software architecture for au	Book
69)	1991	Federal Coordinating C	Grand challenges : high perf	Book
70)	1989	Basili, Victor R., 194	Maintenance = reuse-oriented	Book
71)	1990	Sum, Robert N.	object-oriented project mana	Book
72)	1990	Fong, Don.	Configman / Don Fong.	Book
73)	1991	International symposiu	1991 International symposium	Book
74)	1990	Kitchenham, B. A.	Software engineering for lar	Book

Author Contributors: Endres, Albert.  
Weber, Herbert, 1940-

Title SOFTWARE development environments and CASE technology :  
European symposium, Konigswinter, June 17-19, 1991 proceedings  
/A. Endres, H. Weber (eds.)

Series Title Lecturer notes in computer science ; 509

Publisher Berlin ; New York : Springer-Verlag, c1991.

Description Book viii, 285 p. : ill. ; 25 cm.

Subjects Computer SOFTWARE - Development - Congresses.  
Computer-aided SOFTWARE ENGINEERING - Congresses.  
& CALL NO.

CMU LOCATION SEI-BK QA75 .L75 no.509 c.1  
E&S-BK 005.1 S6815 1991 c.2

Notes Includes bibliographical references.

Date 1991

Language english

Standard No. 0387541942

Full Record Next Record Prev Record Close

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### Figure 3

(Message /usr/users/kky/Mail/inbox:188)  
Return-Path: kky@SEI.CMU.EDU  
Received: from SEI.CMU.EDU by iu.sei.cmu.edu (5.65/2.5)  
id AA17597; Tue, 1 Dec 92 11:25:27 -0500  
Received: from IU.SEI.CMU.EDU by sei.cmu.edu (5.65/2.3)  
id AA12244; Tue, 1 Dec 92 11:25:31 -0500  
Received: from localhost by iu.sei.cmu.edu (5.65/2.5)  
id AA17593; Tue, 1 Dec 92 11:25:25 -0500  
Message-Id: <9212011625.AA17593@iu.sei.cmu.edu>  
To: Library@SEI.CMU.EDU  
Subject: LITERATURE REQUEST  
(Books, Reprints, Journals, Literature Searches, etc.)  
Date: Tue, 01 Dec 92 11:25:24 EST  
From: Karola Yourison <kky@SEI.CMU.EDU>

Type:            ( )Book            ( )Tech Report            ( )Journal            ( )Search  
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For:            ( )Project            ( )Reference            ( )Personal  
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Acquire:        ( )Buy            ( )Subscribe            ( )Borrow            ( )Copy  
-----  
Author(s):  
-----  
Title:  
-----  
Author        ROBERTS, Eric.  
Title        THINKING RECURSIVELY / Eric ROBERTS.  
Publisher     New York : J. Wiley, c1986.  
Description   book x , 179 p. : ill. ; 24 cm.  
Subjects      Recursion theory.  
\*\*\* CMU LOCATION & CALL NO.  
             E&S-BK 510.1 R64t c.1  
Notes        Includes index. Bibliography: p. 175-176.  
Date        1986  
Language     english  
Standard No. 0471816523 (pbk.)  
OCLC No.     12553888  
Acq Number   Z11777  
Date Added   870707

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Vol:            Publ. Date:            Edition:            Pages:  
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Search:        ( )Keywords    ( )Time Frame        ( )Databases  
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Time:            ( )Regular    ( )Rush

1. Please complete all information.
2. Please allow up to six weeks for a book purchase to arrive. If a book is needed sooner, check the space labeled "Rush."
3. Once you complete the form, submit it as you do a mail message. It will automatically be sent to library@sei.cmu.edu.
4. Your message will be acknowledged by someone in the SEI Library.

Please request for me from the Engineering and Science Library on campus.

Thank you very much.

"librequest." Librequest is the electronic version of the library literature request form which the library has used successfully for years. It is an all purpose form that can be used to order a book, to generate an online search, or to request an article. In order to use librequest, the SEI employee has to copy the online template into his account. Once established, the template can be used over and over again. Librequest is mailed to all SEI librarians simultaneously for processing via electronic mail. Most library users are very creative and insert the online card catalog record into the form or any other online records they have available, such as records from Dialog searches the library performed for them. As software engineers they enjoy manipulating online files, thus the library receives about 75% of its requests electronically. See figure 3 for a sample of an online request.

### **Current Awareness**

The SEI Library is working very closely with the university librarians and has taken a great interest in the development of LIS. As part of the support and interest, the SEI Library is helping to finance the purchase of the IEE (Institute for Electrical Engineers, London, England) INSPEC file. The university library bought the rights to mount several years of online files from the IEE.

The INSPEC file, which covers computer science, electrical engineering, and physics, is by far the most heavily searched file at SEI. Unlimited access to LIS has helped to cut down the monthly Dialog bill. Many of the requested online searches are for recent publications usually covering a two-year span. If a wider search is needed by a patron, the SEI librarians utilize file 2, the INSPEC file of Dialog.

At the beginning of this year, the SEI library introduced a new library service utilizing the INSPEC file of LIS. The library sent an online memo to the institute's 12 project leaders offering to search CMU's INSPEC file for the latest information on a quarterly basis. The service is a pilot project which will become part of the library's regular services if there is enough interest. Project leaders are asked to send in a few key words germane to their area of research. The purpose is to keep researchers informed of

the latest developments in their area of expertise. SEI librarians are using the mail feature of LIS to mail records to their accounts. The records are transferred to an online file, edited, and mailed to patrons electronically. The response from patrons using this new library service has been overwhelmingly positive, and the SEI Library decided to continue this new service.

### **Online File Application**

Any SEI Library patron who is starting a new project will be in need of a large number of journal articles and books. Utilizing the described electronic mail feature, library system users at the SEI have yet another option to transfer records from LIS to their desk tops. This feature is the online file application.

After mailing all necessary individual records to the SEI account, library users can create an online file. Once the file is named patrons can insert an unlimited amount of records into the file. The file can be edited to achieve a more professional look. Records can be prioritized and records from other sources can be added. Some library patrons create their own online bibliographies using this technology. Others use the file application to capture all records and mail them to the SEI Library through electronic mail. Some users favor the online request form. Either way, patrons enjoy dealing with the library electronically and enjoy manipulating data and records to their best advantage.

The SEI community is eagerly awaiting the full implementation of LIS II. One of the enhanced features of this new system is the technology which enables the library patron to select an unlimited number of library catalog records from any given menu and to mail this entire file to an SEI account in one single application. Mailing of individual records is no longer necessary.

### **Conclusion**

In the future, the special relationship between the SEI Library and the CMU libraries will continue to grow. Interest in continuing and building ties is prevalent and important to our user community. We look with excitement and promise to future developments and liaisons. ■

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# Information Access in a Developing Country: Special Libraries in Egypt

by *Alexandra Dimitroff*

■ Developing countries face barriers to information access that few of us in North America encounter. While technology has eased many of the problems, it has also created some frustration. This article describes two special libraries in Egypt with special note of each library's attempts at overcoming some of these barriers. If library professionals in North America are to help, our profession's international cooperation goals must include practical plans for improving document accessibility as well as planning that recognizes the shortcomings of existing information delivery systems in developing countries.

**I**T IS NOT SURPRISING THAT INFORMATION ACCESS problems exist in developing countries.

What is surprising is that the North American library community hasn't done more to assist these countries in improving library services. In Egypt, for example, foreign funding has resulted in the creation of a fine scientific and technical information (STI) retrieval network. This network identifies sources of STI, but it does not provide an efficient, reasonably priced document delivery service. This unfortunate planning oversight (the funding and planning were U.S.-based) became obvious to me as I visited libraries in Cairo, Egypt during a visit in February and March, 1992.

This article will describe two special libraries in Cairo. One is a branch library at Cairo University and the second is a government agency (the STI network mentioned above). The two differ substantially but they both illustrate how special librarians in Egypt provide information in specialized environments while coping with the economic constraints of a developing country.

## Special Libraries in Egypt

There are 383 special libraries in Egypt (1986

data). Most are in government departments, semi-governmental institutes, and learned societies. In 1986 there were only 41 special libraries in the private sector.

Unfortunately, I could not arrange to visit any private sector libraries, but I made visits to two special libraries, one of which is fairly typical of Egyptian special libraries according to my host, a library science faculty member from Cairo University.

Special librarians in Egypt are as committed to providing quality information services to their clients as special librarians elsewhere. While special libraries in Egypt tend to have larger budgets (relative to institutional budgets) than other types of Egyptian libraries, these budgets are still very modest when compared to North American or European standards. A lack of resources, and the high cost of printed materials, has forced Egyptian librarians in all types of libraries to compensate for weaknesses in their collections. The primary means of overcoming these gaps is through strong personal networking. Egyptian librarians are familiar with the problems in their own libraries and expend a great deal of energy in making and maintaining contacts with other



libraries. Of necessity, this frequently includes using foreign supported libraries located in Cairo, such as the British Counsel Library or the American Center Library. While librarians feel fortunate that they and their patrons have access to the collections and interlibrary loan networks of these libraries, it is unfortunate that indigenous information delivery systems are so inadequate. Also, and not insignificantly, the use of these libraries diverts hard currency out of the Egyptian economy, something that Egypt can ill afford.

### **Document Delivery in Egypt**

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A major problem in Egyptian libraries has been document delivery. Over the past several years, access has improved considerably through better electronic access systems and the availability of these systems through a national network. These systems are the exact systems we in North America and Europe search every day for the most current scientific and technical information. But access to the documents identified through these state-of-the-art electronic searches has not improved. What has resulted is a certain level of compromise on the part of STI seekers and librarians in that they are still dependent on foreign sources for document delivery. While the government has attempted to improve document delivery through the goals of an STI network (ENSTINET, described later), this has not occurred with any other type of information. From the viewpoint of a North American observer, it was puzzling how such a gap in information access was allowed to occur.

### **An Academic Special Library: The DRTPC Library**

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Cairo University has a decentralized library system which includes a large central library, which serves the humanities and social science faculties, and 36 branch libraries. The Development Research and Technological Planning Center (DRTPC) Library is one of these branch libraries, operating as a special sci/tech library within the Cairo University academic environment. The DRTPC is an au-

tonomous research center within Cairo University which conducts contract research for Egyptian ministries, public and private sector companies, and international organizations. The Center is the core of a collaborative research and education program, established in 1977, between Cairo University and the Massachusetts Institute of Technology. Research areas focus on a broad range of engineering, economic, and social science topics such as transportation, energy, social conditions, communication, and all areas of engineering.

The DRTPC Library supports the activities of the Center by collecting and organizing all DRTPC publications, working papers and technical reports, a basic collection of statistical information sources related to science, technology and development in Egypt, and reference works in support of current research. The library currently houses approximately 4,000 volumes, with a strong technical report collection. There are 105 current periodical subscriptions. Services offered by the library include standard reference services, referral services for indepth research in areas not covered by the Center, preparation of bibliographies, photocopying, and lending (circulation) services.

As in most special libraries, the DRTPC Library specializes in individualized service. SDI activities are a high priority. Library staff read and monitor all relevant journals, books, and technical reports and standards and route anything that corresponds to an individual's identified research profile.

Document delivery, too, is a major service offered by the Library. Because the collection is small, particularly the journal collection, the DRTPC Library procures documents from another Cairo University library or, too frequently, other Cairo area libraries (e.g., American University in Cairo or the British Counsel Library). Patrons must pay for documents, but only to cover duplication costs and any postage charges. While patrons do eventually obtain documents, the system is slow (compared to document delivery services in North America) and expensive. While paying the equivalent of US\$3.00-7.00 for a photocopy of an article seems reasonable to us, to most Egyptians this is a very large sum. (To put it in

perspective, a typical Egyptian librarian working for a government library makes less than 1/8 of the average entry level salary of U.S. librarians.)

The Cairo University Central Library is not automated and offers no electronic search service. Neither do these exist in the DRTPC Library. However, the library is in the midst of creating an online catalog. Because few libraries in Egypt are automated, this catalog will only be used locally. However modest, this small automation project is typical of how Egyptian librarians find a means of implementing innovations where they can.

Cost was given as the primary reason for not having online search services, particularly the high cost of hardware. Computers in Cairo cost about the same as they do in the United States in U.S. dollars, but relative costs are significantly different because of the extremely low exchange rates. Cairo University Library can not absorb operational costs of online searching and charging library patrons is not a feasible option given the economic realities in that environment. If an electronic search is determined to be the best source for a particular information need, the DRTPC librarians refer patrons to the Egyptian National Scientific and Technical Information Network (ENSTINET), a government agency that is the primary source of STI in Egypt. ENSTINET charges fees for its services, however, and individual researchers must pay them, either personally or with research funds.

The DRTPC is a well-organized and well-managed library. At the inception of the Center a library was included in the budget. A professional librarian was hired to design and plan the library; a professional's influence is obvious in the policies and procedures observed. It is now staffed by a chief librarian and one assistant librarian. They are assisted by two library assistants.

The librarians at the DRTPC Library meet regularly with librarians from other sci/tech libraries in Cairo. This is done primarily to keep abreast of what is available in these other libraries so that their own patrons can be referred when needed. The librarians are proud of their close relationship with their clients and

their ability to identify other libraries and collections that will assist them in finding the most current and useful information.

## **A Government Special Library: ENSTINET**

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The Egyptian National Scientific and Technical Information Network (ENSTINET) is not a library per se, but provides electronic search and document delivery services to special library users throughout Egypt. ENSTINET is part of the Academy of Scientific Research and Technology, a government agency. Planning for ENSTINET was begun in the late 1970s with support from the U.S. Agency for International Development (USAID).

In the first phase (1979–81) Georgia Tech and the Egyptian government analyzed scientific and technical information needs in Egypt and designed the network. It was decided that a distributed network configuration would work best, with a central organizational unit in Cairo. Six regional "nodes" are now established throughout Egypt. Institutions were selected to host these nodes based on their geographic location, staff expertise, and willingness to serve the public. These nodes are located in academic institutions.

In addition to the six regional nodes, ENSTINET has identified five information sectors. These include agriculture, energy, industrial, medial and health care, reconstruction, science and technology, and sociology. These sectors define the subject scope of information services offered by ENSTINET to any Egyptian citizen.

The second phase (1981–82) of the USAID project was implementation. Extensive training was a major part of phase two, including training at Catholic University in Washington, DC. for many ENSTINET information professionals. The U.S.-trained staff subsequently trained local staff, resulting in over 800 persons being trained, ranging from top administrators (learning about administration of information systems and policy issues) to information professionals who would be providing direct services (learning about database design and development, online searching techniques, and abstracting) to paraprofessionals

(who would be entering data into ENSTINET developed databases). These individuals became the staff at the ENSTINET center in Cairo, the regional nodes and the sectoral information nodes.

ENSTINET has six objectives. These are:

- (1) To raise public awareness of information utilization.
- (2) To develop scientific and technical databases in support of Egyptian sci/tech programs.
- (3) To facilitate access to information resources.
- (4) To market information (through increase in demand).
- (5) To train both end-users and professional librarians in the use of specific STI systems and information-related issues.
- (6) To coordinate with local, regional, and international information programs.

To accomplish these objectives, ENSTINET offers various services, a few of which will be described here. The most familiar to North Americans is retrospective database searching. ENSTINET staff conduct database searches, for a fee, on any database available, locally produced or international. Dialog, STN, and BRS are primary vendors. ENSTINET also subscribes to several databases in CD-ROM format (including Medline, ERIC, PsychLit, CAB, and Compendex).

In addition to these internationally available databases, ENSTINET searches its locally-produced databases. These databases are particularly important in light of ENSTINET's mission to improve access to STI originating in or concerning Egypt. These include bibliographic databases (one on bilharziasis and another on Egyptian STI in general) and directory databases (for Egyptian scientists and engineers and ongoing agricultural research projects).

The bibliographic database on Egyptian STI is also available in paper form as *Egyptian Scientific and Technical Abstracts*. This database covers Egyptian literature in many formats: articles, technical reports, conference proceedings, and theses. Abstracts are written in English by ENSTINET staff for all items, whether the original was in Arabic or English. This database gathers into one source all published material related to Egypt in science, technology, and medicine.

The production of a union list of periodicals in Egyptian libraries was a major accomplishment that is one effort toward improving document delivery in Egypt. As mentioned, utilizing Egyptian sources for document delivery is a major economic issue. In the past, many library users were dependent upon foreign sources for document delivery. The American University in Cairo Library, the American Center Library, and the British Counsel Library, in particular, were major sources of periodical articles. With the publication of the ENSTINET union list, up to 13,000 titles have been identified in over 120 Egyptian libraries. Knowing this location information will not only save client time (it takes 4–5 weeks to obtain articles through the British Counsel Library) but will keep Egyptian pounds in the country. Other services offered by ENSTINET are SDI services, electronic messaging (which is free and the first of its kind in Egypt), and an extensive training program for information users.

In the future, ENSTINET hopes to expand geographically and into the private sector. Specifically, they hope to encourage small businesses to establish links into the network. This would be of particular value to those businesses that do not have library services in-house (most businesses in Egypt).

## Conclusions

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Visiting these two special libraries in Egypt was an eye-opening experience. The similarities to libraries in North America were everywhere. It was the problems, however, and how the librarians work to overcome them, that were most memorable. Librarians in Cairo's

special libraries have devised creative and workable means of assisting their clients in obtaining information. These librarians are aware of what is going on in the library world outside of their country. They have excellent relationships with their clients and with each other. They offer some services that, while not as efficient or timely as online computer searching, are no less valuable to their clients. They were optimistic and are looking forward to the day when they can implement online services in their own libraries.

My question on leaving Cairo was why are these librarians forced to operate in such relative isolation? Granted, obtaining documents within a reasonable time frame is possible through the cooperative services of the foreign libraries in Cairo and it is through networking that this is possible. But why aren't these journals available locally? While ENSTINET has brought Egyptian STI access up to date, why was it planned with so little consideration for the documents themselves? ENSTINET has no journal collection. The system was planned and implemented assuming that documents would be available through the usual means, namely foreign-supported libraries in Cairo. The technology has in this case leap-frogged over reality. This situation is indicative of what can happen when no national information policy is in place.

While external funds assisted in creating a timely and efficient STI network that takes advantage of the latest in electronic information technology, no funds were allocated to

improving collections. Collection development is not as exciting as the newer computer applications, but how can complete direct services be offered without this most traditional of indirect services? In countries with extremely limited internal funding sources for information systems, it is critical that a national information policy is in place prior to initiation of planning activities to insure appropriate distribution of scarce resources. A good information policy will insure that basic information services are available upon which to build a more complete and efficient electronic based network.

In conclusion, when we think of expanding our horizons through professional goals, we must not neglect the practical side. Ties with developing countries must be maintained and strengthened not only with policies and advice, but with practical plans that will make information accessible to everyone, not just the economic elite. Libraries in North America can operate with limited resources, too, but our situations in no way compare to those that exist in developing countries. While it is not realistic to expect special libraries or our parent organizations to directly support international cooperative efforts, we might individually and as a professional collective work to find ways to broaden our perspective to include libraries in all nations. SLA's ongoing international focus is a great beginning, but this initiative must not continue to exist without support from all members. Action must follow on all levels: from policy writing to resource sharing. ■

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## Acknowledgements

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# Atmospheric Sciences Information Resources in the United States— An Overview for Librarians

by *Mary Layman and Shirley Smith*

■ The libraries and laboratories of the United States contain a wealth of information in atmospheric sciences. While recognizing that the subject is vast, this paper highlights many of the important sources for that information. Major library collections are described, and libraries with substantial atmospheric science holdings are listed. Atmospheric science organizations which provide information are included as well as governmental meteorological programs. Electronic databases and electronic networking resources are discussed. Addresses are provided for all of the sources listed in the paper, and definitions of terms are included.

## Introduction

Everyday newspapers, television news, and other information sources present stories about the Earth's troubled atmosphere—the ozone has a hole in it, the planet is warming up under the “greenhouse effect,” air pollution is reaching dangerous levels. For years Los Angeles, Denver, and other cities have lived in a perpetual smoggy haze. Eastern lakes are dying from acidity caused by air pollution.

Environmental problems are high on the list of current debates in government and industry. A major research project, Sequoia 2000, at the University of California, has been initiated to study global change. Atmospheric scientists, who have been working for years to unravel the mysteries of the air that surrounds us, are receiving more and more attention as humans begin to deal with damage to the atmosphere. As research expands, the information resulting from that research expands also.

In this paper we present an overview of the many types of information produced and information sources available in the atmo-

spheric sciences in the United States. As we developed this paper, we were overwhelmed by the amount of atmospheric, climatological, and meteorological information that exists today. It comes in every conceivable format—paper, data tapes, CD-ROM, online numeric and bibliographic databases, electronic networks—and is gathered, analyzed, processed, and distributed by a very large number of companies, universities and government agencies.

We have attempted to be comprehensive in our presentation, but cannot claim to be exhaustive—the field and the material produced through its research change and grow daily.

The next section of the paper provides some definitions of terms used in atmospheric science. The following two sections cover library collections. Data centers, research institutes, and other non-library sources of information are covered after that. There is a short section on air pollution control regulations, and then information about electronic formats. Finally, the appendices provide results of an online bibliographic search, and addresses of collections and organizations.

## II. Definitions

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As librarians and information specialists field questions about the atmosphere, it is helpful to know some terminology. The following definitions clarify some of the major terms:

**Atmosphere:** "The envelope of air surrounding the earth and bound to it more or less permanently by virtue of the earth's gravitational attraction; the system whose chemical properties, dynamic motions, and physical processes constitute the subject matter of meteorology."

**Meteorology:** "The study dealing with the phenomena of the atmosphere. This includes not only the physics, chemistry, and dynamics of the atmosphere, but is extended to include many of the direct effects of the atmosphere upon the earth's surface, the oceans, and life in general. The goals often ascribed to meteorology are the complete understanding, accurate prediction, and artificial control of atmospheric phenomena."

"A distinction can be drawn between meteorology and climatology, the latter being primarily concerned with average, not actual, weather conditions."

**Climatology:** "The scientific study of climate. In addition to the presentation of climatic data..., it includes the analysis of the causes of differences of climate..., and the application of climatic data to the solution of specific design or operational problems..."

"This general subject has been placed in several positions relative to the science of meteorology, for example: a 'sister' science; an intermediate science between meteorology and geography; a branch of meteorology; etc. When meteorology is properly considered in its broadest sense as the complete study of the atmosphere, climatology must be regarded as a major branch of meteorology."<sup>1</sup>

For the purpose of this paper, the term "atmospheric sciences" will be used.

## III. Major Library Collections

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**Desert Research Institute, University of Nevada System (DRI):** this collection is discussed first because it is the authors' home collection, and because it is an example of a premier atmospheric science collection that is both broad and indepth in its subject coverage.

DRI has had an atmospheric research center for 30 years. The Patrick Squires Library of Atmospheric Science collection is extensive. It includes American Meteorological Society Conference Proceedings on Cloud Physics, Radar Meteorology, Severe Storms, Weather Modification; World Weather Records, World Survey of Climatology, and Monthly Weather Review. Reference works include HMSO handbooks on meteorological instrumentation and World Meteorological Organization station data. DRI collects government publications such as the National Climate Center climatological data series from all the states (precipitation and temperature) from the beginning of record, daily weather maps, hourly precipitation for all states from the beginning of record, monthly climate data for the world, storm data, and extensive NOAA technical memos and reports. The large serial collection includes all American Meteorological Society titles, plus *Journal of Air and Waste Management Association* (formerly *Journal of the Air Pollution Control Association*), *Contributions to Atmospheric Physics*, *EOS (Transactions, American Geophysical Union)*, *Journal of Geophysical Research*, *Atmospheric Environment and Climate Change*, as well as many foreign titles.

**National Oceanic and Atmospheric Administration (NOAA):** the information in this section was provided by Janice Beattie of the Library and Information Services Division of NOAA. The NOAA Library and Information Network has several meteorological collections throughout the country.

The NOAA Central Library in Rockville, MD, has four historical atmospheric information collections, as well as a great deal of material in the general collection. The rare book room contains a small collection of unique items on weather phenomena. An historical

collection wholly concerned with atmospheric sciences is the M Collection (M adopted from the UDC classification for Meteorology by Weather Bureau librarians). This material includes periodicals, books, and documents, and a series of annual meteorological reports from foreign countries.

The Foreign Meteorological Collection supplements the M Collection, consisting of daily weather reports from many countries in Europe, Asia, the Middle East, and Africa, and a few from Latin America and Canada, as well as the United States and territories.

The C Collection (Climatology) is also global in scope and contains many types of materials, some of them rare. The general collection contains a large number of atmospheric science books as well as NOAA Technical Reports and documents from other government and scientific agencies. A significant section is devoted to satellite material.

**The National Center for Atmospheric Research (NCAR):** information on NCAR collections comes from Librarian Gayl Gray.

The extensive and indepth collection specializes in atmospheric chemistry, climate effects, solar physics, meteorology, and computer science. It is comprehensive in atmospheric science including the greenhouse effect, the ozone hole, and even organisms that put gases into the atmosphere. It has a very good climate collection, and a great deal of pure research/theoretical material.

NCAR has developed an inhouse database called USTAR—a library-sponsored directory of atmospheric scientists. UCAR (University Corporation for Atmospheric Research) is a private, not-for-profit corporation whose members are institutions with doctoral programs in the atmospheric and related sciences. UCAR operates NCAR under contract with U.S. government agencies. The NCAR library also has an internal online catalog.

**Air Force Geophysics Laboratory at Hanscom AFB, MA:** houses a library with substantial atmospheric sciences information. The library has complete runs of American Meteorological Society (AMS) journals, and

foreign meteorological materials, particularly Scandinavian, Northern Europe, and polar information. All of the Royal Meteorological Society proceedings are available as well as materials from the Meteorological Society of Japan, from 1888 on. AFGL library has almost everything the World Meteorological Society publishes, and the Laboratory technical reports beginning with 1945. Lisa Duffek, AFGL Librarian, stated that *Meteorological Abstracts* were originally prepared at the laboratory library under a contract.

#### IV. Other Library Collections

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There are 30 doctoral programs in various aspects of atmospheric sciences in the United States.<sup>2</sup> The libraries of these institutions, and a number of special and government libraries, contain a wealth of atmospheric science information. The following list of libraries was compiled from *Directory of Special Libraries and Information Centers 1991–1992*, *American Library Directory 1991–1992*, and from telephone calls to various individuals and agencies. Addresses and telephone numbers are listed in Appendix C.

- **Air Weather Service Technical Library (AWSTL), Scott AFB, IL.** Librarian Kathryn Marshall provided information on the collection of over 240,000 titles and 225 journal subscriptions on meteorology, climatology, environmental science, and weather effects on aerospace and weapons systems.
- **Atmospheric Sciences Laboratory Library, White Sands, NM.** This library houses journals, books and documents, classified literature, and reports done by scientists at the laboratory.
- **NASA Goddard Space Flight Center, Greenbelt, MD.** Goddard scientists conduct a great deal of research and so generate reports, which are housed in the library. In atmospheric sciences they have a strong collection in the area of instrumentation (such as remote sensing).

- **Purdue University Geosciences Library, West Lafayette, IN.** Meteorology and remote sensing are focus areas of the Geosciences Library collection.
- **Environmental Research & Technology, Inc. Information Center, Concord, MA.** Air pollution and meteorology materials are listed as subject foci for this library.
- **GCA Corporation Technical Division Library, Bedford, MA.** Air pollution and meteorology materials are also featured in this library.
- **Boston College Weston Observatory Catherine B. O'Connor Library, Weston, MA.** Meteorology is listed as a major subject area.
- **Harvard University Gordon McKay Library, Cambridge, MA.** This library houses the Blue Hill collection in meteorology and oceanography.
- **Marine Biological Laboratory Library, Woods Hole, MA.** This unique and historic resource lists meteorology as one of its main subjects.
- **Massachusetts Institute of Technology Dynamics of Atmospheres and Oceans Library, Cambridge, MA.** Meteorology is a primary focus of this collection. The Lindgren Library at MIT also lists meteorology as a subject area.
- **Galson & Galson P.C. and Galson Technical Services Information Center, East Syracuse, NY.** Air pollution, meteorology, and dispersion modelling are subject areas of importance.
- **Calspan Corporation Technical Information Center, Buffalo, NY.** Meteorology is listed as a collection area.
- **Environmental Protection Agency Division of Meteorology Information Service Center, Research Triangle Park, NC.** Air pollution and meteorology are important aspects of this collection.
- **World Data Center, National Center for Data Control, Asheville, NC.** This library lists meteorology, ozone, and atmospheric as collection areas.
- **Institute for Storm Research Library, Houston, TX.** Meteorology and climatology are primary topics of this library.
- **Texas A&M, College Station, TX.** The Departments of Oceanography and Meteorology have a "working collection" of atmospheric science materials.
- **University of Miami Dorothy and Lewis Rosenstiel School of Marine and Atmospheric Sciences Library, Miami, FL.** Atmospheric sciences is included in the list of subject areas.
- **Dartmouth College Kresge Physical Sciences Library, Hanover, NH.** Climatology is a subject area in the collection.
- **University of Alaska Geophysical Institute Library, Fairbanks, AK.** Meteorology is a featured subject area.
- **Ford Aerospace and Communications Corporation Aeronautic Division Technical Information Center, Newport Beach, CA.** Meteorology is included in the subject areas collected.
- **Stanford University Physics Library, Stanford, CA.** Meteorology is a part of the collection.
- **Yale University, New Haven, CT.** Meteorology is listed as an area of the collection.
- **Illinois State Water Survey Library, Champaign, IL.** Atmospheric sciences and meteorology are included in the collection.



- **CH2M Hill, Inc., Redding, CA.** This library houses California weather information, North American weather charts, and California rain; all records.
- **Oceanroutes, Inc. Technical Library, Sunnyvale CA.** Weather, shipping and cargo information as well as historical weather data are included in this collection.
- **U.S. Navy, Naval Oceanic and Atmospheric Laboratory Technical Library, Naval Postgraduate School, Monterey CA.** Numerical weather prediction information and meteorological materials form a part of this collection.
- **University of Colorado Boulder Institute of Arctic and Alpine Research.** The Institute no longer focuses on atmospheric sciences but still has theses in atmospheric sciences done there.
- **North American Weather Consultants Technical Library, Salt Lake City, UT.** Historical data and information on weather modification, air pollution, synoptic meteorology is housed in this collection, as well as northern hemisphere synoptic maps from 1899 and synoptic charts and data.
- **Cooperative Institute for Research in the Atmosphere, library, Fort Collins, CO.** Information on global climate dynamics, local area weather forecasting, weather modification, applications of satellite information, air quality, cloud physics, mesoscale studies is in the collection. Additionally, this library holds World Weather and Hourly Precipitation and Climate Data CD-ROMs.
- **University of Arizona, Tucson Library.** The library has a large collection of climatological information.
- **Scripps Institution of Oceanography, University of California San Diego, La Jolla, CA.** Climatology is an important

part of this collection, and there is a great deal of information on acid rain, the greenhouse effect, CO<sub>2</sub> and global warming.

- **Colorado State University Atmospheric Science Library, Fort Collins, CO.** This sub-branch of the Engineering Research Library contains climatological maps and 200 periodical subscriptions.

## V. Other Information Sources

When looking at atmospheric science information, it is important to realize that it comes in a large variety of formats, is packaged and re-packaged many ways, and is both produced and distributed by dozens of groups. Finding one's way through the maze of acronyms, agencies, and information types is a challenge worthy of Indiana Jones.

A guidebook discovered in the course of researching this paper is *The Federal Plan for Meteorological Services and Supporting Research, Fiscal Year 1992*.<sup>3</sup> The Preface states, "This Federal Plan, the 27th in the series than began in 1965, continues the tradition of summarizing the meteorological services and supporting research activities of all agencies of the Federal Government." The document is a wealth of information—one of the items covered includes an outline of the coordination of such multiagency programs as "Next Generation Weather Radar," "National Aircraft Icing Program," and "National Aviation Weather Program Council." Planning, committee activities, and publications are described for all federal programs involved in producing or using meteorological information, and the agency obligations for meteorological operations are discussed. Funding arrangements for all of this are presented, and there are brief descriptions of each agency's meteorological efforts. Since the federal government is both a heavy user and a major producer of atmospheric science research, the Plan is an invaluable tool for navigating the subject. A list of the current publications of the OFCM are in Appendix B of this paper.

One of the programs outlined in the Plan, the Regional Climate Centers program, is a source

of meteorological/climatic data for the United States. It is part of the National Climate Program established by law in 1978 to help "understand and respond to natural and man-induced climate processes and their implications."<sup>4</sup> The NCP is an interagency program and the Regional Climate Centers are, or in some cases will be, providing a variety of climatic data and information. The Western Regional Center at the Desert Research Institute in Reno, NV is already in operation, as is the High Plains Regional Center in Lincoln, NE, the Midwestern Center in Champaign, IL, the Northeast Regional Center in Ithaca, NY, and the Southeastern Center in Columbia, SC. The Southern Regional Center is to be in Baton Rouge, LA. "The activities of an individual Regional Climate Center fall under four major topics: (1) information and educational services, (2) applied climate research, (3) data bases development and management, and (4) communication and program management."<sup>5</sup> They provide summary-of-the-day observations for all states in the region and hourly surface observation data for all first-order stations in the region, and may provide hourly precipitation data and archive the regional climate impact data. For librarians who receive inquiries about local or regional climatological data it is good to know about these Centers—they will provide requested data at little or no cost in many cases.

Other sources of atmospheric science information are (see Appendix D for addresses):

- **American Geophysical Union, Washington, DC.** The AGU publishes journal such as *EOS* and *Journal of Geophysical Research*, as well as books. One of its 13 subject sections is Atmospheric Sciences.
- **American Meteorological Society, Boston, MA.** "The members of the AMS are persons interested in the advancement of the atmospheric and related hydrospheric sciences...."<sup>6</sup> The AMS publishes and distributes many atmospheric sciences journals such as *Journal of Climate*, *Climate Research and Impact Analysis*, *Journal of the Atmospheric Sciences*,

*Weather and Forecasting*. It produces *Meteorological and Geostrophysical Abstracts* online and in paper.

- **World Meteorological Association, Geneva, Switzerland.** The WMO states as its objective "World-wide cooperation in making meteorological and hydrometeorological observations and in standardizing their publication, promotion of rapid weather information services, application of meteorology to human activities, encouragement of research and training in meteorology, promotion of activities in operational hydrology,"<sup>7</sup> There are 155 member states. Publications include reports of meetings of constituent bodies, regulations, technical manuals and notes, *International Cloud Atlas*, *WMO Bulletin*.

## VI. Air Pollution Control Regulations

A particular atmospheric phenomenon that effects many of us daily is air pollution. People's health and businesses are impacted by the regulations imposed to clean up the air, so access to those regulations are important.

The *Code of Federal Regulations (CFR) Index* contains several subject headings relating to air pollution. "Air Pollutants" reveals a list of air quality data, standards, and measurements, including emissions controls. The "Air Pollution Control" heading indicates the individual states' federal air pollution control information—hearings, extensions, tables, as well as information on military installations, national monuments and parks, and some specific information regarding smelting. The "Air Pollution Sources" section lists the CFR locations for the compliance schedules for all of the states to meet federal control levels. The "Air Quality Control Regions" section lists information by state, as does the "Air Quality Implementation Plans" section. The vast majority of "Air Pollution" regulations appear in *CFR 40*, though volumes 30, 32, 26, and 43 contain some of the information.

The *CFR* is the source for the location of federal air pollution information. State regula-

tions can be located through the appropriate state agencies, and/or through the state government documents section of libraries within a given state.

## VII. Electronic Information Sources

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Librarians generally turn to bibliographic online databases for information, and there are a number of databases which provide references to atmospheric science topics. Additionally, there are databases available which are numeric or provide other kinds of information.

An online search of the Computer-Readable Databases file in Dialog using the terms "atmospheric or meteorolog? or climat? or weather" brought up a set of 45. Thirty-one of those databases were selected for inclusion in this paper. Descriptions below are taken from the database records. Addresses are provided in Appendix E.

- **Accu-Weather**—meteorological and climatological data from several thousand weather stations in more than 100 countries. Type: Numeric; Time span: current 48 hours; historical data up to 2 years.
- **Acidoc**—provides citations and abstracts of Canadian, American, and European literature relating to the effects of acid precipitation on the environment. Type: Bibliographic; Time span: 1975-1989, closed file.
- **AgBrief**—provides up-to-the-minute weather information for all growing areas of the world. Type: Numeric, graphic; Timespan: current.
- **Applied Science & Technology Index**—meteorology is included. Type: Bibliographic; Timespan: 1983-present.
- **Climatedata: Clim-20**—contains calculated and extracted statistics of climate data observations from more than 1,800 present and historical cooperating weather stations in the U.S. Type: Time series; Timespan: 1951-1980.
- **Climatedata: NCDC (National Climate Data Center) Fifteen Minute Precipitation**—contains the full record of precipitation data observations from the approximately 2,700 cooperating active and abandoned weather stations in the U.S. that have recorded precipitation measurements in 15-minute increments. Type: Time series; Timespan: 1948-present.
- **Climatedata: NCDC Hourly Precipitation**—contains the full record of precipitation data observations from the approximately 5,500 cooperating active and abandoned weather stations in the U.S. that have recorded hourly precipitation measurements. Type: Time series; Timespan: 1948-present.
- **Climatedata: NCDC Summary of the Day**—contains the full period of record of climate data observations from nearly 25,000 present and historical cooperating weather stations in the U.S. Type: Time series; Time span: 1948-present.
- **Cold Regions Data Base**—atmosphere and meteorology of cold regions are included. Type: Bibliographic; Timespan: 1950-present.
- **DriverBrief**—provides real-time weather and road conditions information, U.S. and Canada. Type: Numeric; full-text Timespan: current.
- **FLITEbrief and Pilotbrief**—weather and route information for pilots. Type: Numeric; graphic.
- **FOCUS ON: GLOBAL CHANGE**—contains citations to international literature covering developments and issues on the processes effecting the earth, including meteorology and atmospheric sciences. Type: Bibliographic; Timespan: 1990-present.
- **General Science Index**—includes atmo-

spheric science. Type: Bibliographic; Timespan: 1984–present.

- **Global Change Encyclopedia**—provides worldwide statistical data on climatic, population, and ecological changes as observed via more than 20 U.S. and European satellites. Type: Statistical; graphic; Timespan: current.
- **Greenhouse Effect Report**—U.S. regulatory, legislative, business, and technological news and developments as well as international actions relating to global warming and the greenhouse effect. Type: full-text Timespan: 1990–present.
- **Hail Bibliography**—contains references to international English language journal and other literature pertaining to hail and related subjects. Type: Bibliographic; Timespan: 1950–present.
- **INFOCLIMA**—contains sets of climate system data for use in the study of climate and climate variations. Type: Statistical.
- **Meteorological and Geostrophysical Abstracts**—provides coverage of international current research literature in atmospheric and related hydrospheric sciences. Type: Bibliographic; Timespan: 1972–present.
- **MOLARS**—contains bibliographic descriptions of books, journals, and other materials covering meteorology, climatology, and related atmospheric sciences acquired by the (British) National Meteorological Library. Type: Bibliographic; Timespan: 1971–present.
- **National Environmental Data Referral Service (NEDRES)**—catalogs and indexes publicly available environmental data, including climatological and meteorological data. Type: Directory; Timespan: 1972–present.
- **Nimbus-7 Brightness Temperature**
- **Grids for the Northern Hemisphere**—brightness and temperature data for the North Polar region gathered using the Scanning Multichannel Microwave Radiometer (also on CD-ROM). Type: Numeric; Timespan: 10/29/78–1/31/80.
- **NOWrad**—contains more than 800 regional composite weather images from multiple radar sites in the U.S. Type: Graphic; Timespan: current, every 1/2 hour.
- **Real-Time Weather Information System**—provides real-time U.S. and Canadian weather information. Type: Numeric; graphic; full-text; Timespan: current.
- **Soviet Science and Technology**—covers scientific and technical information published in the Soviet Union and Eastern European countries, including meteorological information. Type: Bibliographic; Timespan: 1975–present.
- **SupeRadar**—plots hourly U.S. weather data in a high-resolution detailed national radar summary. Type: Graphic; numeric; Timespan: current.
- **SuperSat**—provides standard projection national satellite images with an enhanced and remapped version of GOES satellite imagery. Type: Graphic; numeric; Timespan: most recent 36 hrs.
- **United States Weekly Temperatures**—covers weekly average temperatures reported by some 200 weather stations in the U.S. Type: Time series; Timespan: 1981–present.
- **Water Data Bank**—provides annual, monthly, and daily time series of hydrological precipitation and runoff data collected from 300 study sites. Type: Time series.
- **World WeatherDisc**—contains current and historical data covering all aspects of meteorology, featuring tabular and graphic

displays. Type: Time series; graphic; Timespan: 1700s–present.

- **SIRS Science CD-ROM**—includes climatology and meteorology Type: Full-text; Timespan: 1989–present.
- **NGDC-05 (National Geophysical Data Center) CD-ROM**—solar terrestrial physics data of NOAA and NASA. Type: Numeric; Timespan: 7/55–12/88.

To obtain an idea of coverage in widely-available databases, the authors conducted an online search in August 1991, in Dialog databases Meteorological Abstracts, NTIS, Pollution Abstracts, Oceanic Abstracts, INSPEC 121, CA Search, Environline, and Scisearch. The search strategy was “global (w)climat? (w)change.” A total of 1,147 citations were identified (removal of duplicates was not used). The database with the most citations was Scisearch, followed by NTIS. Meteorological Abstracts was third. Results are in Appendix A.

A potentially powerful source of electronic information on atmospheric science is the electronic network, notably (at present) Internet. A quick search through WAIS (Wide Area Information Servers) revealed “Weather” database, made available by Thinking Machines—it includes the day’s satellite weather maps and the MIT weather forecast. WAIS also contains a list of weather-related files including the intriguing “Weather and terrorism....” The applications navigator from Thinking Machines includes the application “Fractal Atmospheric Cloud Rendering.” As the use of electronic networks grows, and certainly if the National Research and Education Network (NREN) becomes a reality, atmospheric science information will find another outlet in that medium.

Atmospheric science information exists in large amounts and in many places—librarians searching for this information have to deal with an embarrassment of riches rather than scarcity. In this paper we have attempted to provide some of the primary sources for information specialists who need to access this growing and important area of research. ■

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## Acknowledgements

The authors would like to thank a number of people for their assistance and cooperation in the preparation of this material: Dr. Richard Reinhart, DRI; Janice Beattie, NOAA; Gayl Gray, NCAR; Lisa Duffek, AFGL; Kathryn Marshall, AWSTL; Col. Aufderhaar, Pentagon; Dr. James Almazan, Office of the Federal Coordinator; Carlos Robles, Cerf NET; and the many information professionals who told us about their libraries and information centers.

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## References

- <sup>1</sup> Huschke, Ralph E., ed. *Glossary of Meteorology*. Boston, MA: American Meteorological Society. 1959.
- <sup>2</sup> *The College Blue Book*. New York, NY: Macmillan Information. 1989.
- <sup>3</sup> Published by Office of the Federal Coordinator for Meteorological Services and Supporting Research, NOAA, Washington, DC FCM Pl-1991, (301-770-3464).
- <sup>4</sup> Public Law 95–367
- <sup>5</sup> Proposed Dimensions of Regional Climate Center Activities, August 15, 1990, internal correspondence.
- <sup>6</sup> American Meteorological Society, organizational procedures.
- <sup>7</sup> *World of Learning*, 1989, p. 40.

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**Appendix A****Results of a Dialog Search Using the Strategy  
"global(w)climat?(w)change," August 1991**

Database	# of hits
Scisearch	841
NTIS	121
Meteorological Abstracts	60
Environline	40
INSPEC2	37
Pollution Abstracts	20
CA Search	16
Oceanic Abstracts	12

Total: 1147

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**Appendix B****Current Publications of the Office  
of the Federal Coordinator for Meteorological Services**

Title	Date	Number
Federal Plan for Meteorological Services and Supporting Research, Fiscal Year 1992	April 1991	FCM-P1-1991
National Plan for Space Environment Services and Supporting Research: 1988-1992	July 1988	FCM.PI0-1988
National Severe Local Storms Operations Plan	September 1990	FCM-PII.1990
National Hurricane Operations Plan	April 1991	FCM-P12-1991
National Winter Storms Operations Plan	December 1990	FCM-P13.1990
Federal Plans for Mutual Support and Cooperative Backup Among Operational Processing Centers	March 1985	FCM-PI4-198S
National Plan for Stratospheric Monitoring, 1988-1997	July 1989	FCM-P17-1989
National Plan for Tropical Cyclone Research	December 1990	FCM.P2h-1990
Preliminary National Plan for Lightning Detection Systems	June 1988	FCM-P#.1988
Federal Plan for the Coordination of Automated Weather Information System Programs	May 1988	FCM.P2J.1988
Federal Meteorological Handbook No. 1—Surface Observations	April 1988	FCM-H1.1988
Federal Meteorological Handbook No.2—Surface Synoptic Codes	December 1988	FCM-H2.1988
Federal Meteorological Handbook No.10—Rocketsonde Observations	December 1988	FCM-H10.1988

Federal Meteorological Handbook No. 11- Doppler Radar Meteorological Observations		
Part B—Doppler Radar Theory and Meteorology	June 1990	FCM.H11#1990
Part C—WSR-88D Products and Algorithms	February 1991	FCM-H11C-1991
Directory of Atmospheric Transport and Diffusion Models, Equipment, and Projects	March 1991	FCM-I3-1991
Tropical Cyclone Studies	December 1988	FCirf-R11-1988
Tropical Cyclone Studies Supplement	August 1989	FCM-R11-1988 S
Interdepartmental Meteorological Exchange System Report, IMDES	July 1990	FCM-R12-1990
Federal Meteorological Requirements 2000	October 1990	FCM-R13-1990
Standard Formats for Weather Data Exchange Among Automated Weather Information Systems	May 1990	FCM.S2-1990
Standard Telecommunication Procedures for Weather Data Exchange	July 1989	FCM-S3-1989
Federal Standard for Siting Meteorological Sensors at Airports	May 1987	FCM-S4-1987

## Appendix C

## Library Information

Desert Research Institute  
Patrick Squires Library of Atmospheric  
Sciences  
P.O. Box 60220  
Reno NV 89506-0220  
702-673-3155  
Fax 702-677-3157

NOAA Central Library  
6009 Executive Blvd.  
Rockville MD 20852  
301-443-8330  
Fax 301-443-0237  
Hours: 8-4:30 weekdays

NCAR Library  
P.O. Box 3000  
Boulder CO 80307  
303-497-1000  
Fax 303-497-1137

Geophysics Laboratory Research Library  
Hanscom AFB,  
Bedford MA 01731  
617-377-4895  
Fax 617-377-5627

Air Weather Service Technical Library  
Scott AFB, IL 62225-5458  
618-256-2625  
Fax 618-256-3772

Atmospheric Sciences Laboratory Library  
White Sands NM 88002  
505-678-1317

NASA Goddard Space Flight Center Library  
Greenbelt MD 20771  
301-286-4375

Purdue University Geoscience Library  
Geosciences Bldg.  
West Lafayette IN 47907  
317-494-3264

Environmental Research and Technology  
Inc. Information Center  
696 Virginia Rd.  
Concord MA 01742  
617-369-8910

GCA Corp.  
Technical Division Library  
213 Burlington Rd.  
Bedford MA 01730  
617-275-5444

Boston College Weston Observatory  
Catherine B. O'Connor Library  
Weston MA 02193  
617-899-0950

Harvard University Gordon McKay Library  
Pierce Hall, 29 Oxford St.  
Cambridge MA 02138  
617-495-2836

Marine Biological Laboratory Library  
Woods Hole MA 02543  
617-548-3705

Massachusetts Institute of Technology  
Dynamics of Atmospheres and Oceans  
Library  
Room 54-1427  
Cambridge MA 02139  
617-253-2450

Galson I Galson P.C.  
Galson Technical Services Information  
Center  
6601 Kirkville Rd.  
East Syracuse NY 13057  
315-437-7181

Calspan Corp. Technical Information Center  
4455 Genesee St.  
Buffalo NY 14225  
716-632-7500

Environmental Protection Agency  
Division of Meteorolog  
Information Service Center  
Research Triangle Park NC 27711  
919-541-4536

World Data Center—NCDC  
Federal Bldg.  
Asheville NC 28801  
704-258-2850

Institute for Storm Research Library  
4104 Mt. Vernon  
Houston TX 77006  
713-529-4891

Texas A&M University  
Dept. of Oceanography  
College Station TX 77843  
409-845-7327

University of Miami  
Dorothy I. Lewis Rosenstiel School of  
Marine & Atmospheric Sciences Library  
4600 Rickenbacker Causeway  
Miami FL 33149  
305-361-4007

Dartmouth College  
Kresge Physical Sciences Library  
Hanover NH 03775  
603-646-3564

University of Alaska  
Geophysical Institute Library  
Fairbanks AK 99701  
907-479-7503

Ford Aerospace & Communications Corp.  
Aeronautic Division  
Technical Information Center  
Ford Road  
Newport Beach CA 92660  
714-720-4667

Stanford University  
Physics Library  
Stanford CA 94305  
415-497-4342

Yale University Library  
Box 6666  
New Haven CT 06511  
203-436-2480



Illinois State Water Survey Library  
605 E. Springfield, Sta. A, Box 5050  
Champaign IL 61820  
217-333-4956

CH2M HILL, Inc.  
2525 Airpark Dr.  
P.O. Box 49-2478  
Redding CA 96049  
916-243-5831

Oceanroutes, Inc. Technical Library  
680 W. Maude Ave., Suite 3  
Sunnyvale CA 94086  
408-245-3600

U.S. Navy, Naval Oceanic and Atmospheric  
Laboratory Technical Library  
Naval Postgraduate School  
Monterey CA 93943-5002  
408-646-2341

University of Colorado, Boulder  
Institute of Arctic and Alpine Research  
Campus Box 450  
Boulder CO 80309  
303-492-6387

North American Weather Consultants  
Technical Library  
3761 South 700, East Suite B  
Salt Lake City UT 84106-1155  
801-263-3500

Cooperative Institute for Research in the  
Atmosphere  
Colorado State University  
Fort Collins CO 80523  
303-491-8448

Library, University of Arizona  
Tucson AZ 85721  
602-621-2101

Scripps Institution of Oceanography  
University of California San Diego  
9500 Gilman Dr., 0175C  
La Jolla CA 92093-0175  
619-534-3274

Atmospheric Science Library  
Colorado State University  
Atmospheric Science Bldg.  
Fort Collins CO 80523  
303-491-8532

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## **Appendix D**

## **Other Information Sources**

American Geophysical Union  
2000 Florida Ave. NW  
Washington, DC 20009  
202-462-6900

World Meteorological Organisation  
Case Postale 2300  
CH-1211 Geneva 2, Switzerland  
22-73081 1 1

American Meteorological Society  
45 Beacon St.  
Boston MA 02108  
617-227-2425

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## **Appendix E**

## **Online Databases**

Accu-Weather  
Accu-Weather, Inc.  
619 W. College Ave.  
State College PA 16801  
814-237-0309

Acidoc  
Quebec Ministere de l'Environnement  
Centre de Documentation  
3900, rue Marly, Box 57  
Sainte-Foy, PQ Can G1X 4E4  
418-643-5363

AgBrief, DriverBrief, FLITEbrief, NOWrad,  
PilotBrief, Real-Time Weather Informa-  
tion Service, SuperRadar, SuperSat WSI  
Corporation  
4 Federal St.  
Billerica MA 01821  
508-670-5000

Applied Science & Technology Index  
General Science Index  
H.W. Wilson Co.  
950 University Ave.  
Bronx NY 10452  
212-588-8400

Climatedata series  
Earthinfo Inc.  
5541 Central Ave.  
Boulder CO 80301  
303-938-1788

Cold Regions Data Base  
U.S. Library of Congress  
Science and Technology Division  
Cold Regions Bibliography Project  
10 First St., SE  
Washington, DC 20540  
202-707-5668

Focus On: Global Change  
ISI  
3501 Market St.  
Philadelphia PA 19104  
215-386-0100

Global Change Encyclopedia  
U. S. International Space Year Assoc.  
Space Agency Forum on ISY  
600 Maryland Ave., NW, Suite 600  
Washington, DC 20024

Greenhouse Effect Report  
Business Publishers, Inc.  
951 Pershing Dr.  
Silver Spring MD 20910-4464  
301-587-6300

Hail Bibliography  
Illinois State Water Survey Library  
2204 Griffith Dr.  
Champaign IL 61820  
217-333-4956

Infoclima  
World Meteorological Org.  
World Climate Programme Dept.  
World Climate Data Information Referral  
Service Case Postale No. 2300  
CH-1211 Geneva 2, Switzerland  
022 346400

Meteorological and Geostrophysical  
Abstracts American Meteorological  
Society  
45 Beacon St.  
Boston MA 02108  
617-227-2425

2yLLARS  
Great Britain National Meteorological  
Library  
London Rd.  
Bracknell, Berkshire  
RG12252 England  
0344 854844

NLD#S  
U.S. National Environmental Satellite, Data  
and Information Service Assessment and  
Information Services Center  
National Environmental Data Referral Service  
1825 Connecticut Ave., NW  
Washington, DC 20235  
202-673-5548

Nimbus-7 SMMR  
National Snow and Ice Data Center  
CIRES, Box 449  
University of Colorado  
Boulder CO 80309  
303-492-5171

Soviet Science and Technology  
IFI/Plenum Data Corp.  
302 Swann Ave.  
Alexandria, VA 22301  
703-683-1085

United States Weekly Temperatures  
Reuters Ltd.  
Reuters Historical Information Division  
Exchange Tower, Suite 1900  
2 First Canadian Place  
Toronto, ON Canada MSX 1 E3  
416-364-5361

Water Data Bank  
U.S. Agricultural Research Service  
Hydrology Laboratory  
Water Data Center  
Room 139, Bldg. 007, BARC-West  
Beltsville, MD 20705  
301-344-4411

World WeatherDisc  
WeatherDisc Assoc.  
4584 N. E. 89th  
Seattle WA 98115  
206-524-4314

SIRS Science CD-ROM  
SIRS  
P.O. Box 2348  
Boca Raton FL 33427-2348  
407-994-0079

NGDC-05  
National Geophysical Data Center  
World Data Center-A  
National Space Science Data Center

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**Mary Lavman, former Director of Libraries at the Desert Research Institute is currently an Associate Librarian at the University of California, San Diego, and Librarian for the San Diego Supercomputer Center.**

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**Shirley Smith is the Director of Libraries, Desert Research Institute.**

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# On the Scene

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## 1993/94 Candidates for SLA Office

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### For President-Elect



**DIDI PANCAKE**

• **DIDI PANCAKE** is the Director of the Science and Engineering Library, University of Virginia, Charlottesville, VA.

**Past Employment:** Acting Director, Science/Technology Information Center, University of Virginia, Charlottesville, VA (1973–74); Science Information Specialist, University of Virginia, Charlottesville, VA (1969–73).

**Education:** B.S., (Biology) Baylor University (1967); M.L.S., University of Texas at Austin (1969).

**SLA Member Since:** 1969.

**SLA Chapter Activities:** *Virginia Chapter:* Chair, Public Relations Committee (1970–71); Editor, *VASLA Bulletin* (1971–73, 1975–76, 1987–88, 1992–93); President-Elect (1973–74); President (1974–75); Chair, Nominating Committee (1978–79).

**SLA Division Activities:** *Science-Technology Division:* Chair, Membership Committee (1976–77); Chair-Elect/Program Planner (1977–78); Chair (1978–79); member, Student Relations Committee (1990–91).

**SLA Association-level Activities:** Chair, Joint Cabinets Study Committee on Subject Groups (1974–75); Chapter Cabinet Chair-Elect, SLA Board of Directors (1979–80); Chapter Cabinet Chair, SLA Board of Directors (1980–81, 1983–84); 1983 New Orleans Conference Program Committee (1981–83); SLA Committee on Committees (1984–85); Director, SLA Board of Directors (1985–88); Secretary, SLA Board of Directors (1985–86, 1987–88); SLA Special Committee on Association Structure (1986–88); member, SLA Committee on Committees (1988–90); Coordinator, Fellows of the Special Libraries Association (1990– ); Chair, Special Committee to Review Committees (1991–92).

**Other Professional Activities:** At various times I was a member of the Virginia Library Association, and was a founding member of the Virginia Microfilm Association. I was active in both groups in holding office or committee appointments. SLA, however, has always been my main choice as a professional Association.

**Awards/Honors:** Fellow of the Special Libraries Association (1989).

**Publications:** I have written very few formal, published research papers in my career, but have done innumerable columns in Chapter and Division newsletters as well as the Fellows newsletter, reports for the Board of Directors, et. al. Of all these, the three I would choose as representative are the "Report of the Ad Hoc Committee to Review Committees" (1992), the "Report of the Special Committee on Association Structure," (1988) and a small article originally intended for the *SLA Student Bulletin* in 1991 entitled "Thanks, Sara!" which actually appeared in *Sci-Tech News*, vol. 45, no. 2, April 1991, pp. 41-42.



**GLORIA J. ZAMORA**

• **GLORIA J. ZAMORA** is the Protocol and Information Officer for the management at Sandia National Laboratories in Albuquerque, NM.

**Past Employment:** Technical Information Specialist, Sandia National Laboratories (1980-83); Reference Librarian, Engineering and Physical Sciences, Phillips Laboratory, Albuquerque, NM. (1976-80).

**Education:** B.A., University of Michigan (1975); A.M.L.S., University of Michigan (1976).

**SLA Member Since:** 1977.

**SLA Chapter Activities:** *Rio Grande Chapter:* Bulletin Editor (1978-79); President-Elect (1979-80); President (1980-81); Special Projects Chair, Fun Run Committee (1983-84); Co-chair (1984-85); Chair, Bylaws Committee (1985); NTIS Liaison (1983-86); Chair, Government Relations (1985- ); Chair, Rio Grande Chapter's 30th Anniversary Project Committee (the project was co-sponsorship of the American Translator's Association annual meeting October 1987); Chair, Nominating Committee (1989-90); organized networking workshop, "Is There a Network in Your Future: Networks from the Local to the National" (May 1991).

**SLA Division Activities:** *Information Technology Division:* member. *Science-Technology Division,* member. *News Division:* member.

**SLA Association-level Activities:** Cincinnati Conference Committee (1991-93); Director, SLA Board of Directors (1988-91); Chair, Meckler Award for Innovative Technology Committee (1989-90 and 1990-91); Committee on Committees (1990); Nominating Committee (1985-86); member, Positive Action for Minority Groups Committee (1982-83); Chair, Positive Action for Minority Groups Committee (1984-85).

**Other Professional Activities:** White House Conference on Libraries and Information Services (WHCLIS): Delegate at Large nominated by Sen. Bingaman, NM (July 1991); Networking Topic Committee, (April 1991); Special Libraries Representative, NM Planning Committee for Pre-WHCLIS, (1990-91); attended NM WHCLIS meeting (February 1991). New Mexico Library Association: Chair-Elect and Chair, Online Roundtable (1982-84); Chair, Publications Committee. Appointed by the New Mexico State Librarian to the Continuing Library Education Advisory Council as the special libraries representative (1981-85). Women's Program Committee, Sandia National Laboratories (1983-84).

**Awards/Honors:** Sandia Award for Excellence for significant contributions to the United States-Russian Federation Safety and Security and Dismantlement Technical Exchange (1992). Librarian of the Year, presented by Sigma Xi, The Scientific Research Society, New Mexico Chapter (1984). Young Career Women of New Mexico, National Federation of Business and Professional Women (1981). White House Fellowship regional finalist (1984).

**Publications:** Ms. Zamora wrote an article which appeared in several Chapter and Division newsletters, Fall 1991. She has co-authored several articles and book reviews which appeared in library journals and edited the proceedings of a conference on conference literature.

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## For Chapter Cabinet Chair-Elect



STEPHEN ABRAM

• **STEPHEN ABRAM** is Publisher, Electronic Information (Canadian Tax Online and Canada Law Online) for Carswell, Thomson Professional Publishing, Toronto, ON Canada.

**Past Employment:** Director of Information and Marketing Resources for Hay Management Consultants (1985-91); Head Librarian, Coopers & Lybrand, Chartered Accountants and Consultants (1980-85).

**Education:** B.A. (Anthropology, Hon.), University of Toronto (1977); M.L.S., University of Toronto (1980).

**SLA Member Since:** 1980

**SLA Chapter Activities:** *Toronto Chapter:* Chair, Career Guidance (1987-88); Director (1988-89); President-Elect (1989-90); President (1990-91); Past President (1991-92); Chair, Nominations Committee (1992-93); Member of the Year Award (1992).

**SLA Division Activities:** *Business and Finance Division:* member (1980– ); *Library Management Division:* Chair (1992–93).

**SLA Association-level Activities:** member, President's International Inter-Association Task Force to Enhance the Image of the Information Professional (1988–90); member, President's Visioning Committee (1992–93).

**Other Professional Activities:** Association for Information Science: Co-chair, Local Arrangements Committee, 1990 International Annual Conference, Toronto. American Library Association: Trained Site Visitor, Committee on Accreditation. University of Toronto: member, Faculty of Library & Information Science Council (1990–91), 1991–92); Director, Faculty of Library & Information Science Student Council (1979–80). Canadian Association of Special Libraries and Information Services: Executive and national-level positions including National Treasurer (1985–88); National Director (1984–85); Chair, Toronto Chapter (1984–85); Program Coordinator (1983–84); Membership Chair (1982–89). Canadian Library Association: member (1979– ). Toronto Inmagic Users' Group: Founding Chair (1985–89). Toronto Library Continuing Education Group: Secretary (1984–90). Toronto Association of Law Librarians: member (1991– ). Stephen Abram has taught the following courses: two programs in advanced and introductory online searching at Ryerson Polytechnical Institute (ongoing); CEU credit courses for SLA and the University of Toronto on such issues as innovation through technology, strategic technology planning, and leadership; speaker across Canada and the United States on library issues such as marketing library services, productivity and technology management, and librarian competencies and image for CLA, CASLIS, Ontario Library Association, SLA, Canada Online, Computers in Libraries Canada, University of Toronto FLIS, University of Waterloo, etc.

**Awards/Honors:** SLA Toronto Chapter, Kathleen Reeves Award for highest standing in Special Libraries course; Beta Phi Mu.

**Publications:** Some publications include "Special and Corporate Libraries: Planning for Survival and Success," *Canadian Library Journal* (August 1983); "The Ten Commandments of Time Management," *Specialist* (October 1990); and "Image & Pay" in the *Report of the Task Force on the Image of the Librarian and the Information Professional* (ERIC). Contributor to *Business Online: A Canadian Guide*. (John Wiley: 1989).



**WILLIAM FISHER**

• **WILLIAM FISHER** is Professor/Associate Director of the School of Library & Information Science at San Jose State University in San Jose, CA.

**Past Employment:** Assistant Professor/Assistant Dean, Graduate School of Library & Information Science, UCLA (1981–88); Senior Assistant Librarian, California State University, Dominguez Hills (1976–81); Assistant Librarian, Florida Atlantic University (1975–76).

**Education:** B.A., (History/Political Science) University of Arkansas (1972); M.A., (History) University of Arkansas (1973); M.L.S., (Library Science) State University of New York at Geneseo (1974); Ph.D., (Library and Information Management) University of Southern California (1981).

**SLA Member Since:** 1981.

**SLA Chapter Activities:** *San Andreas Chapter:* member; faculty advisor to SJSU Student Chapter (1988– ); Coordinator, state-wide meeting (1991–92); San Francisco Conference Local Arrangements Coordinator (1991–92); elected to Executive Board as Director (1992– ). *San Francisco Bay Area Chapter:* member. *Southern California Chapter:* member; faculty liaison to UCLA Student Chapter (1981–88); Chair, Long-Range Planning Committee (1984); Southern California representative to state-wide networking group (1983–85); President-Elect/President/Past President (1985–88); Anaheim Conference Local Arrangements Committee (1987); Chapter Service Award (1989).

**SLA Division Activities:** *Information Technology Division:* member. *Library Management Division:* member. *Business and Finance Division:* Publications Committee (1987–89); Assistant Bulletin Editor (1987–89); Advisory Board (1987–89); Nominations Committee (1989–90); Program Chair for San Francisco Conference (1991–92).

**SLA Association-level Activities:** member, Statistics Committee (1984–87), Chair, Statistics Committee (1987); SLA representative to ALA/LAMA Statistics Coordinating Committee (1984–87); Professional Development Committee (1986–92), Co-chair (1987), Chair (1988–90); member, Special Committee to Review *Special Libraries* (1990); member, PREPS Commission (1991– ); Chair, President's Visioning Committee (1992– ).

**Other Professional Activities, Memberships, and Honors:** American Library Association: member (1976– ). BRASS Education Committee: Chair (1989–90). American Society for Information Science: member (1981– ); Los Angeles Area Chapter Advisory Council (1981–88). Association for Library and Infor-



mation Science Education: member (1981– ). California Library Association: member (1988– ). California Library Networking Task Force/Network Steering Group: member (1988–90). Instructor of CE courses for SLA and other groups. Speaker/moderator at numerous presentations at SLA conferences and other conferences. Library Manager, UCLA Olympic Village (1984). Editor of the *Journal of Business & Finance Librarianship* (1987– ); Outstanding Teaching Award, GSLIS/UCLA (1988).

**Publications:** A number of books and journal articles including: *Business Journals of the United States*, Greenwood Press, 1991; "A Brief History of Library-Vendor Relations Since 1950," under review by *Library Acquisitions: Practice & Theory*; and "Professional Development for Special Librarians: Formal Education and Continuing Education for Excellence," (co-authored with Jim Matarazzo) in process for an issue of *Library Trends*.

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## For Division Cabinet Chair-Elect



MONICA ERTEL

• **MONICA ERTEL** is Manager of Library and Information Services for Apple Computer, Inc., a position she has occupied for the past 11 years.

**Past Employment:** Manager, Memorex Corporation, Technical Information Centers (1977–81); Librarian, Acurex Corporation (1976–77); Research Assistant, Stanford Research Institute (1974–76).

**Education:** M.B.A., University of Santa Clara (1982); M.A., (Library Science) San Jose State University (1976); B.A., (Social Science) San Jose State University (1974).

**SLA Member Since:** 1976

**SLA Chapter Activities:** *San Andreas Chapter:* member, International Relations Committee (1992–93); Consultation Chair (1986–87); Long-Range Planning Committee (1986–88); Chair, Tour Committee (1985–86); member, Program Committee (1983–85); member, Education Committee (1980–83); Chair, Nominating Committee (1981–82); member, Nominating Committee (1979–80).

**SLA Division Activities:** *Science-Technology Division:* Chair-Elect, Chair, and Past Chair (1989–92); Nominations Chair (1992–93). *Engineering Division:* Director (1987–89); Chair, Nominating Committee (1985–86); Secretary/Treasurer (1982–84); member, Nominating Committee (1981–82).

**Other Professional Activities:** American Library Association: member since 1975. Library and Information Technology Associa-

tion: Library Microcomputer Template Group Founding Chair (1985–87); LITA Technology Showcase Committee (1988 conference). International Federation of Library Associations: member since 1988; member, Information Technology Committee (1989– ). Silicon Valley Information Center Chair of Advisory Board (1985–89); Editor and Coordinator of the *Apple Library Users Group* (1983– ).

**Awards/Honors:** Mark Baer Award-San Andreas Chapter of SLA (1990–91). Excellence in Publishing Award from NAUGSAW for publication of the *Apple Library Users Group Newsletter*.

**Publications:** Monica Ertel is the author of 12 published articles. These include "HyperCard in the Apple Library," *Proceedings of the Second International Pacific Conference on Information Technology* Singapore (1989); "A Tour of the Stacks: HyperCard for Libraries," (with Jane Oros) *Online* (January 1989); "Roll-your-own or Library Software for Small Libraries," *Database* (April 1990); and "Getting a Piece of the Pie: R&D at the Apple Library," *Library Journal* (September 16, 1990). In addition, she has been profiled in *Online* (November 1988); *MacWeek* (December 1, 1987); *American Libraries* (February 1987); and *Softalk* (June 1982).



ELLEN MIMNAUGH

• **ELLEN MIMNAUGH** is currently a Senior Associate Technical Services Representative at Chemical Abstracts Services (CAS). Ellen has also acted as an intrapreneur with CAS Search Service providing online searches in chemistry and other sciences via the STN family of databases.

**Past Employment:** Consultant, Information Consulting, Inc. (1975–88); Assistant Librarian, McDonnell Douglas Aircraft Company, Long Beach, CA (1967–70); Information Scientist, National Lead (NL Industries) South Amboy, NJ (1967); Information Chemist, Shell Chemical Company, New York, NY (1962–67).

**Education:** A.B., (Chemistry) Rosemont College, Rosemont, PA (1962); M.S., Columbia University School of Library Science, New York, NY (1966).

**SLA Member Since:** 1966.

**SLA Chapter Activities:** *Central Ohio Chapter:* Co-Chair, Great Lakes Regional Conference II (1990–92); Long-Range Planning (1988–90); President (1987–88); President-Elect (1986–87); Treasurer (1983–85). *New Jersey Chapter:* Bulletin Editor (1977–78). *Los Angeles Chapter:* member (1968–70). *New York Chapter:* member (1966–67).

**SLA Division Activities:** *Information Technology Division:* Chair (1992–93); Chair-Elect (1991–92); Chair, Long-Range Planning (1990–91); Program Planner (1989–90); Chair, Technical Services Section (1988–89); Chair-Elect, Technical Services Section (1987–88); Membership Chair (1984–87). *Library Management Division:* Treasurer (1988–90); Chair, Consultants Section (1985–86). *Chemistry Division:* member. *Business and Finance Division:* member.

**SLA Association-level Activities:** member, President's Visioning Committee (1992–93); member, Nominating Committee (1989).

**Other Professional Activities:** American Chemical Society Division of Chemical Information. Central Ohio ASIS. Franklin County Library Association. OCLIC (Ohio Council of Library and Information Sources). Central Ohio SLA representative (1988).

**Publications:** Published articles, book and software reviews, technical reports.

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## For Director



**RICHARD GEIGER**

• **RICHARD GEIGER** is Library Director at *The San Francisco Chronicle*, a position he has occupied since 1984.

**Past Employment:** Library Manager, *San Jose Mercury News* (1980–84); Librarian, *San Francisco Chronicle* (1976–80); Librarian, San Francisco Maritime Historical Park Library (1975–76).

**Education:** B.A., (Art and Environmental Biology) University of California, Santa Barbara (1970); M.L.I.S., University of California, Los Angeles (1975).

**SLA Member Since:** 1974

**SLA Chapter Activities:** *San Francisco Bay Region Chapter:* President (1991–92); President-Elect and Membership Chair (1990–91); member, Hospitality Committee (1988–90); Chair, Advertising Committee (1979–80); *San Andreas Chapter:* founding member; member, Program Committee (1983–84).

**SLA Division Activities:** *News Division:* Chair (1988–89); Chair-Elect and Program Chair (1987–88); Treasurer (1985–87); Chair, Publicity/Public Relations Committee (1984–85); member, Membership Committee (1983–84).

**SLA Association-level Activities:** Chair, Public Relations Committee (1992–94); member, Special Committee to Review Confer-

ence Schedules (1991–92); A speaker in CE courses “Computerization of the News Library Functions—A Systems Primer,” New York Conference (1989) and “Managing the News Library,” Pittsburgh Conference (1990); panelist, “Library’s Role in the Age of the Electronic Darkroom,” Pittsburgh Conference (1990).

**Other Professional Activities:** Associates of the National Maritime Museum Library: President (1989–92). California State Networking Taskforce: member, Steering Committee (1990–92). Cooperative Library Agency for Systems and Services: member, Nominating Committee. American Library Association: member. American Society of Indexers: member. Society of California Archivists: member. Society of Professional Journalists: member. Speaker at Online ’87, “Coping with Change.”

**Awards/Honors:** Ralph Shoemaker Award (1989); listed in *Who's Who in the West*.

**Publications:** contributor, *News Media Libraries: A Management Handbook* (1993); author of numerous articles and columns in the *San Francisco Bay Region Chapter Bulletin* and the News Division’s newsletter, *News Library News*. Under Richard’s direction the San Francisco Chronicle Library, in conjunction with several vendors, publishes The Chronicle database online and on CD-ROM.



ELEANOR A.  
MACLEAN

• ELEANOR A. MACLEAN is the Head, Blacker-Wood Library of Biology at McGill University.

**Past Employment:** Head, Blacker-Wood Library of Zoology and Ornithology (1972–88) and of the Botany-Genetics Library (1982–88), both at McGill University; Reference Librarian, Engineering, Mathematics and Science Library, University of Waterloo, Waterloo, ON (1969–72).

**Education:** B.A., (Biology) McGill University, Montreal, PQ (1967); M.L.S., McGill University (1969).

**SLA Member Since:** 1972.

**SLA Chapter Activities:** Bulletin Editor, (1974–75); Chair, Directory Committee (1975–77); Secretary (1977–79); President-Elect, President, Past President (1982–85); Archivist (1979– ).

**SLA Division Activities:** *Biological Sciences Division:* Hospitality Chair (1984–85); Chair-Elect, Chair, Past Chair (1987–90); Bylaws Chair (1989–90). *Science-Technology Division:* Awards Committee (1984–88); Secretary (1991–93).

**SLA Association-level Activities:** member, Task Force on Conference Proceedings (1984–85); member, Committee on Canadian Concerns (1984–86); Chair, Scholarship Awards Committee (1986–87, 1991–92).

**Other Professional Activities:** Association of McGill University Librarians: President (1991–92); Canadian Library Association: Committee on Intellectual Freedom (1978–82); CACUL Conservation Committee (1984–88); Awards and Scholarship Committee (1990–92); Raptor Research Foundation: Archivist (1984– ); American Ornithologists' Union 1991 Conference Organizing Committee.

**Awards/Honors:** First recipient, SLA Eastern Canada Chapter Librarian of the Year Award (1991).

• **JANE E. REED** is Associate Librarian, The University Club, New York City, a position she has occupied since 1988.



**JANE E. REED**

**Past Employment:** Librarian, The Union League Club, New York City (1980–88); Assistant Librarian, Historic Hudson Valley (formerly Sleepy Hollow Restorations) (1977–80).

**Education:** B.A., Nazareth College; O.T.R., (Registered Occupational Therapist) Western Michigan University; M.S., (Library and Information Science) Pratt Institute; numerous continuing education courses, workshops, and seminars.

**SLA Member Since:** 1978.

**SLA Chapter Activities:** *New York Chapter:* Chair, Professional Development (1989–90); President-Elect, President (1990–92).

**SLA Division Activities:** *Library Management Division:* member, Career Management Committee (1991–92). *Museums, Arts & Humanities Division:* Chair-Elect, Chair (1987–89); Associate Editor, Business Manager, *MAHD Bulletin* (1988–89); Chair, Nominating Committee (1991–92).

**SLA Association-level Activities:** member, Strategic Planning Committee (1991–92); member, Committee to Review Committees (1992); member, Committee on Committees (1992–94).

**Other Professional Activities:** Archivists Roundtable of Metropolitan New York: member. METRO Reference Librarians Discussion Group: Member (1992–93). Reviewer, *Library Journal* "Video Reviews" (1986– ). Group Captain, Librarians at Work: 1992 Democratic National Convention Information Central.

**Awards/Honors:** Beta Phi Mu, Theta Chapter.



ETHEL M. SALONEN

• **ETHEL M. SALONEN** is Senior Account Executive for the Boston, MA office of Dialog Information Services, Inc. and has been with Dialog since 1989.

**Past Employment:** Manager, Research and Life Sciences Libraries, Arthur D. Little, Inc. (1987–89); Manager, Research Library, Arthur D. Little, Inc. (1985–89); Information Specialist, Research Library, Arthur D. Little, Inc. (1980–85); Reference Librarian, Physical Sciences Library, University of California at Riverside (1978–80).

**Education:** B.A., (Earth and Space Sciences) State University of New York at Stony Brook (1974); M.A., (Liberal Studies-Applied Sciences) State University of New York at Stony Brook (1977); M.S., (Library Science) C.W. Post College, Long Island University (1978).

**SLA Member Since:** 1978.

**SLA Chapter Activities:** *Boston Chapter:* Co-Chair, Logistics Committee (1990– ); Chair, Nominating Committee (1991); President (1987–90); Chair, Sci-Tech Committee (1986–87); Chair, Logistics Committee (1984–86); member, Program Committee (1983–87, 1990– ).

**SLA Division Activities:** *Information Technology Division:* Chair, Government Relations Committee (1990–92).

**SLA Association-level Activities:** member, San Antonio Conference Planning Committee (1989–91).

**Other Professional Activities:** New England Online Users Group (NENON) President-Elect (1992–95).

**Awards/Honors:** Beta Phi Mu; University Librarian's Service Award, University of California at Riverside; Director's Excellence Award, Arthur D. Little, Inc.; Dialog Sales Award.

**Publications:** Authored a number of "Guides to Reference Sources" while at the University of California at Riverside. Authored a *Library Unit Collection Development Plan* and a *Bibliographic Instruction Manual* for the Management Education Institute while at Arthur D. Little, Inc. Dialog Publications include revision of the "Focus on Science and Technology" seminar and "Using Dialog Throughout the Product Life Cycle" which was presented at the 1991 Dialog Update.

# IFLA 1992: Library and Information Policy Perspectives

by *Emily R. Mobley*

**T**HE INTERNATIONAL FEDERATION OF LIBRARY Associations and Institutions (IFLA) convened its 58th General Conference in New Delhi, India from August 30-September 5, 1992. The IFLA conference coincided with the Birth Centenary Celebration of Dr. S.R. Ranganathan, the father of the library movement in India. The Indian Library Association hosted the conference. Closing statistics indicated that 1,173 delegates from 80 countries attended along with at least 300 persons who were members of the organizing committee, volunteers, accompanying persons, or exhibitors. American delegates numbered 105. At least a quarter of the U.S. delegates were SLA members.

Robert Wedgeworth, IFLA President, opened the conference with a speech entitled "New Beginnings." He remarked on the problems of the time such as a worldwide economic recession, the political turmoil in parts of Eastern Europe which have led to destruction of some libraries, the cost of library materials, and the widening gap between countries in the use of information technology. At the same time he gave examples of progress, innovation, vision, courage, and persistence in Argentina, Botswana, Mexico, Germany, Australia, and France.

In commenting on the topic of image and status of the profession, President Wedgeworth suggested that "there may be little we can do to directly influence our image and status [and] perhaps dwelling on the topic may not be in our best interest." According to him the most

important thing is not what the public thinks but how well we are communicating to that public about our services. Thus, one of his major priorities is to develop a stronger capability for making our activities visible and understandable to the public. Perhaps his most poignant statement was "As the late Jesse Shera pointed out, we must decide whether we wish to manage service stations on the super-highways of information, or become traffic engineers managing certain kinds of information traffic intended to address priority needs in our respective societies." Leo Voogt, the new IFLA Secretary General, succeeding Paul Nauta, was introduced at the opening session.

Each evening attendees were feted at various cultural events showing the great diversity of dance and handicrafts from a number of Indian states. Receptions were hosted by the French Embassy for all conference attendees and by U.S. Ambassador Pickering for American delegates. Many libraries were open for viewing. The author spent an afternoon at INSDOC, India's flagship library for science and technology information. The computer and information services were impressive. On the opposite end of the scale were the facilities of the University of Delhi's Library.

## Programs

As with most U.S. conferences, the number of programs and papers presented provided an overwhelming choice. Most of the sessions had large audiences. The session on core programmes

of IFLA gave attendees a good grasp on the variety of activities in which IFLA is involved. The activities of the UDT (Universal Dataflow and Telecommunication) program are quite advanced and exciting. Activities included research on networks and libraries; electronic document delivery; OSI for libraries; electronic data interchange standards; and packet radio technology. In 1993, the main work of this program will be trends in information technology from a global perspective and the implications of these trends for libraries.

The session on medical librarianship in India gave a very disturbing view of information resources. Although the use of VSATS for MEDLARS searches in major cities was impressive, the state of information in medical school libraries and for doctors in rural areas was disturbing considering the country's population and the extent of its health problems. The most disturbing comment from one speaker was that the scale of the disaster at Bhopal some years ago could have been lessened by a factor of 20 to 1 if the known medical information on such chemicals had been disseminated.

A number of resolutions emerged from both pre-conference meetings and the conference. Resolutions included:

- changing Women's Interests in Librarianship from a Working Group to a Round Table;
- that IFLA, through its Division for Education and Research, should prepare guidelines on curriculum content which should also include teaching the concept of professionalism, education at entry levels, and consider teaching and other support facilities of library schools at national level;
- library associations and other lead agencies at national levels should provide programs in continuing education to enhance professional capability;
- library associations should function as national accreditation bodies where appropriate;

- to provide reliable data on the image and status of the library and information profession in the developing countries, IFLA should formulate standards and guidelines covering core areas for adoption or modification by member associations and institutions and IFLA should encourage member associations and institutions to collect and analyze relevant information;
- and that IFLA should publish a manual of standards and guidelines for library and information services for dissemination to member associations and institutions in order to facilitate the formulation of input/performance standards at the national level, so as to enhance the quality of services as well as societal recognition of the profession.

These and a number of other resolutions may be considered by the IFLA Executive Board during the year and it is expected some will be presented for action by the voting delegates at the 1993 Council meeting in Barcelona.

David Bender was one of the organizers of the IFLA Pre-Conference Seminar on Image, Status, and Reputation, which took place a week prior to the General Conference. Forty-four librarians from developing countries, resource persons, and advisors met to explore the theme. The seminar was sponsored by the Round Table for the Management of Library Associations (RTMLA). In 1988, RTMLA contracted a research project to explore the status of the information profession. Research findings revealed that the general image of the profession was poor and they closely paralleled results reported in SLA's "Inter-Association Task Force Report on Image" (Joe Ann Clifton, et. al., 1990). The RTMLA data reported that among 150 national library association in 90 countries, 82% of librarians believe their status to be low. Eight theme papers were presented, including one by Dr. Bender. (Most of the papers are listed below.)

Where possible, recent data and research findings emphasized the problems relating to



the status, reputation, and image of the library, information science, documentation profession as well as their associations. Among the conclusions drawn from the discussions were: image problems inhibit the ability of the profession to function effectively; associations cannot function as the sole change agents charged with the improvement of the profession's image and status; specific programs and activities must be developed which address the improvement of the profession's reputation; and each member of the profession is responsible for enhancing his/her own status and reputation.

Dr. Bender also reported on the meetings conducted during the Conference of the Round Table for the Management of Library Associations, of which he is a member. An open meeting focused on changes and developments which have had an impact on library associations. Participants in an all-day workshop organized and lead by David discussed the "Guidelines for the Management of Professional Associations in the Fields of Archives, Library and Information Work." The session attracted over 35 participants and was built around five theme papers and two group discussions.

David also serves as Secretary-Treasurer of the Round Table on Management. The major focus of this two-year old group continues to be that of establishing a program. Michael Koenig, another SLA member also active in this Round Table and under its auspices is undertaking a study on privatization of government publication through contracting out. He stated that a number of other countries besides the U.S. was seeing this dilemma or issue for future concern. The Round Table will cosponsor a session on total quality management (TQM) at the Barcelona meeting.

Barbara Perry reported on the programs of the Section on Statistics. An open meeting on the use of library statistics in library management was hosted jointly with the Round Table on the Management of Library Associations and featured a presentation by S. K. Basu from the Indian Institute of Management on probability, statistics, and library management. A full-day workshop cosponsored by the Section on University Libraries focused on perfor-

mance measures for academic libraries and user satisfaction analyses. At meetings of the Standing Committee on Statistics updates were given on the status of two ongoing projects. A directory of library price statistics should be in draft form for discussion at the Barcelona meeting. Further work on a second project, a *Directory of Library Statistics Sources*, will be undertaken by the Russian State Library. In addition, another member of the committee will be preparing a working paper on library statistics for database usage as well as other electronic library activity measures.

Dorothy McGarry reported on the very productive meetings of the Section on Classification and Indexing. The Section has submitted a project for IFLA funding on a state of the art survey of subject heading systems. The Working Group which has been preparing *Guidelines for Subject Authority and Reference Entries* met several times to discuss comments received from the worldwide review and resolved some substantive issues. The *Guidelines* will be published in 1993. The Working Group on Principles for the Construction of Subject Headings also met several times and progressed in agreement on definitions and some principles. A satellite meeting on alphabetic subject access systems will be held in Lisbon prior to the 1993 Conference. Dorothy McGarry, as Chair of the Section, reported on the activities of the Section at the open forum of the Division of Bibliographic Control. She also represents the Section on the Study Group on Functional Requirements for Bibliographic Records, a sub-group of the Standing Committee for the Section on Cataloguing.

Herbert Biblo reported on the meetings of the Standing Committee of the Section of University Libraries and Other General Research Libraries. The Committee received a report from D. Peter te Bockhorst on the section project on performance measurement in academic libraries. Geoffrey G. Allen delivered the final draft of his section project "Collection Needs of University Libraries in Developing Countries." The Committee declined to pursue, at the time, a request by Dr. Beverly Lynch for further study of "Standards for University Libraries" and requested of Dr. Lynch

a more detailed proposal. Herb also reported that the workshop on "Performance Measurements in Academic Libraries" conducted jointly with the Section on Statistics was filled to capacity.

Clive Phillpot reported on the meetings of the Section of Art Libraries. At the committee meetings several projects were reported as being near conclusion. The publication of the papers given in Paris in 1989 and those given in Stockholm in 1990 was imminent. A new edition of the *Art Librarian's Glossary* was almost finished, and will for the first time include Swedish terms in addition to English, French, German, and Spanish. Plans were also approved for a *World List of Art Libraries* to be coordinated by the Art Libraries Society of North America (ARLIS/NA). The focus of the papers given in New Delhi was collection development and acquisition of art materials relating to Southeast Asia. Additional papers were given at an all-day workshop at the Indira Gandhi National Centre for the Arts. As time allowed, groups of art librarians paid visits to the libraries of such institutions as the National Gallery of Modern Art, Lalit Kala Akademi, and the National Museum.

Stanley Kalkus reported on the Standing Committee on Social Science Libraries. The project to publish a *Directory of French Economic Libraries* was dropped. *African Political Party Publications: A Guide to Resources* will be published. The Committee's program in Barcelona will have a session on total quality management and a workshop on networking. According to Stanley, the only negative aspect of the Conference was the exhibits which were housed in the hotel garage which was so hot and humid that spending any time there was virtually impossible.

Wilda Newman's report contained many observations and conference activities. Highlights included coverage of the conference in a number of the local papers as well as television. She is a member of the Standing Committee on Information Technology and reported committee projects on catalogers assistant, graphical user interfaces, and OSI models. The committee will be cosponsoring a Satellite Meeting on "Automated Systems for

Access to Multilingual and Multiscript Library Materials" prior to the meeting next year in Barcelona. Wilda also attended a 30th Anniversary celebration of the Library of Congress office in New Delhi at the American Centre. She stated that she will be able to take advantage of much which was learned at this conference to help with the work of SLA's International Relations Committee, which she chairs.

## Selected Papers

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The papers listed below may be of particular interest to SLA members. Copies have been forwarded to the Information Resources Center at SLA Headquarters and are available upon request. (Contact Kathryn Dorko, IRC, 202/234-4700.) The numbers in parenthesis refer to the paper number.

"Perceptions of the Status of the Profession." M.E. Zapata, VENEZUELA (132)

"Management of Professional Associations: Guidelines." D. R. Bender, USA (94)

"Image, Status and Reputation: Some Observations." R. Bowden, UK (93)

"The Social and Professional Responsibilities of the Profession." P. K. Gupta, INDIA (75)

"Statutory Recognition of Library and Information Profession." A. O. Banjo, NIGERIA (110)

"Improving the Market Value of the Profession: Increasing Recognition." E. C. R. Fong, FIJI (111)

"Improving the Market Value of the Profession: Educational Requirements." C. O. Kisiedu, GHANA (85)

"Women's Status in Librarianship, the UK Experience." S. Parker, UK (123)

- "Productivity, Impact and Quality of Scientific Work at the UNAM: Actions for their Acknowledgement." P. Dector, MEXICO (96)
- "The Post-Perestroyika Sci-tech Libraries: Will They Survive?" A. Zemskov, RUSSIA (97)
- "User Education Around the World: the UNESCO Survey of Library and Information User Education Programmes in Some Developing Countries." O. Kokkonen (153)
- "The Needs of university Libraries in Developing Countries." G. G. Allen, AUSTRALIA (147)
- "Technology as an Agent for Communication." E. J. Valauskas, USA (139)
- "Automated Strategies for Social Development." K. S. Oswalt, USA (125)
- "The Changing Role of the University Library: Crafting a More Effective Role for the Library." F. K. Groen, CANADA (22)
- "Information Services in a University Library: Will the 21st Century Bring us Anything Different or Will it be More of the Same?" A. J. Evans, UK (21)
- "Developmental Strategies of Computerized Legislative Information Services." K. M. Ku, CHINA (37)
- "The Russian Parliamentary Library: Its History, Functions and Proposed Automation." J. Shraiberg and I. Andreeva, RUSSIA (38)
- "Librarianship: Profession, Semi-profession or Mere Occupation? Surveying the Process of Change and Development in British Librarianship Today." M. Freeman, UK (6)
- "The Role of University Libraries in Establishing Policies for Library and Information Services." A. S. Chaudhry, SAUDI ARABIA (19)
- "Training Non-cataloguers about Cataloguing." B. J. Ford, USA (9)
- "Improving Access to Scientific Literature in Developing Countries: A UNESCO Programme Review." A. Abid, PARIS (71)
- "The Indonesian Archeology Photograph and Documentation System (IAPDS) in Leiden." H. Hinzler, NETHERLANDS (67)
- "Improving Interlending Through Goal Setting and Performance Measurement." J. Willemse, SOUTH AFRICA (87)
- "OSIRIS, a Microcomputer Based On-line Serials Information, Registration and Inquiry system." S. Santiago, FRANCE (25)
- "Basic Serials Management Handbook." J. Szilvassy, HUNGARY (92)
- "Information Systems: the Logic of Enquiry." P. G. Underwood, SOUTH AFRICA (62)
- "An Evaluation of the Availability of Periodical Literature in Scientific Libraries: Concept and Methodology." B. Stefaniak, POLAND (1)
- "Personal Access to Library Services by Use of Existing Technologies." T. Van der Werf, NETHERLANDS (43)

## IFLA 1993

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The 59th Council and General Conference of IFLA will take place **August 22–28, 1993** in Barcelona, Spain. The Conference theme will be "The Universal Library, Libraries as Cen-

ters for the Global Availability of Information." Selected subtopics include national and research libraries as nodes in the worldwide network; special libraries and documentation centers: charging for information services; preservation of information, especially of new materials and media; the need for planning, user studies and good management to promote rational exploitation of resources; education and training of librarians: the need to adopt an international approach; and the present image of librarians: managers of public funds and users of new technology.

The Council which meets biennially to vote on officers, dues, and other business will convene during the 1993 conference. A number of resolutions, such as those mentioned earlier, will also be voted on. SLA members who are

interested in becoming involved at the committee and round table levels should make their interest known to David Bender, SLA Executive Director, immediately because new members will be elected to the various committees *prior* to the conference. The committees are the working bodies of IFLA. An individual can stand for election only if nominated by one of the IFLA association members and seconded by another.

Members interested in attending may contact IFLA Headquarters for registration materials. The final program announcement contains many of the details (registration fees, hotels, etc.). If you need the information in a hurry, contact the author as she picked up some extra announcements.



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**Emily R. Mobley is Dean of Libraries, Purdue University, West Lafayette, IN, (317)494-2900, and a Past President of Special Libraries Association. She is the 1990-93 SLA delegate to IFLA.**

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# Looking to the Year 2000: Information Professionals Chart the Course

## The Special Libraries Association 84th Annual Conference Cincinnati, OH June 5-10, 1993

**C**HART YOUR COURSE TO THE SLA's 84th Annual Conference, **June 5-10, 1993**, in Cincinnati! If you are looking ahead to the year 2000 or to June 1993, this year's Conference will highlight the world of new and expanding technology, as well as greater cooperation between information professionals worldwide. You need to be there. As professionals, SLA members must continue their quest for quality and this year's Conference programming will enhance all participants' ability to effectively satisfy the needs of their clientele.

Be there. Join us in "The Queen City of the West" (or Losantiville or "The Blue Chip City"). All are names or nicknames which have been given to Cincinnati. Losantiville was the original name given by the first settlers in 1788. It was changed to Cincinnati by the first Governor of the Northwest Territory, General Arthur St. Clair, who did not like the original name. The newer

name is derived from that of the Roman general Lucius Quintus Cincinnatus via the Society of the Cincinnati, a society of Revolutionary War officers of which St. Clair was a founding member.

The name "Queen City of the West" (usually shortened to Queen City) was coined by Henry Wadsworth Longfellow in a poem mentioning Cincinnati and its wines. "The Blue Chip City" is a nickname promoted by the Greater Cincinnati Chamber of Commerce in recent years.

Located in the extreme southwest corner of Ohio, Cincinnati is on the Ohio River across from Kentucky and about 20 miles from Southeast Indiana. The metropolitan area has a population (1990 census) of about 1.7 million with Cincinnati having a city population of about 364,000, down from its 1960 high of over 500,000.

At one time Cincinnati was larger than Chicago and more famous as the "Gateway to the West" (yet



another nickname), due to the navigation of the Ohio River.

Cincinnati is a river town, and its destiny has always been linked to the Ohio. If you travel by car or taxi into the city from the Greater Cincinnati International Airport, cross the river on the Anderson Ferry by taking scenic Route 212 to Constance Road and follow the signs. The ferry costs \$2.00 and you can pick up U.S. Route 50 right into town.

If you are flying, Cincinnati is definitely easy to reach, 62% of the U.S. population is within one hour's flying time of Cincinnati. The airport is actually located south of Cincinnati in Northern Kentucky (a "Jeopardy!" answer). Delta Airlines has daily direct international flights from several European cities. For drivers, Cincinnati is on I-75, I-74, and I-71, and is about 50 miles from I-70 (via Dayton, OH). For train riders, Cincinnati is on Amtrak's Washington, DC to Chicago route. The Amtrak terminal is part of the old Union Terminal complex, now a museum complex.

Downtown Cincinnati could be any other medium-size city in the U.S. with its contemporary glass and steel skyscrapers. However, you might wish to use the skywalk system which connects the majority of the downtown area above street level and is not something found in most cities. You can walk from almost all downtown hotels to the convention center and to the major shopping areas under cover on the skywalk system. For your information, the following Conference facilities being used by SLA that are connected by the Skywalk system are: the Convention Center, the Hyatt Regency Cincinnati, the Clarion Hotel, the Omni Netherlands Plaza, the Westin Hotel, and the Terrace Hilton.

### Conference Highlights

This year's Annual Conference will sparkle with brilliant opportunities for members to learn, network, and explore. After you register and pick up your Conference material, make sure you stop by InfoExpo, the 1993 SLA Exhibit. SLA's Conference exhibit hall will feature the latest and most up-to-date resources available on the market today. More than 400

booths will provide the creative strategies you need to chart your course into the year 2000. Among the products and services to be featured in this year's exhibit hall are:

- CD-ROM;
- Information storage and retrieval;
- Library automation software;
- Optical publishing;
- Specialized books, periodicals, and directories;
- Library furnishings and suppliers;
- Alerting and search services;
- Government information services;
- Indexing and abstracting services;
- Subscription agencies;
- and much more....

### General Session Speakers

SLA is very pleased to announce that the speaker for General Session I will be **Raymond C. Kurzweil**. Mr. Kurzweil was the principal developer of the first omni-font (i.e., any font) optical character recognition technology in 1976; the first print-to-speech reading machine for the blind (The Kurzweil Reading Machine) in 1976, considered to be the first consumer product to incorporate artificial intelligence technology;



**Raymond C. Kurzweil**



**Barbara Mackoff**

the first computer music keyboard capable of accurately reproducing the sounds of the grand piano and other orchestral instruments (the Kurzweil 250) in 1984; and the first commercially marketed large vocabulary speech recognition technology (Kurzweil VoiceReport) in 1987. Mr. Raymond Kurzweil will address the attendees on Monday morning, June 7, 9:00 a.m., in the Cincinnati Convention Center.

**Barbara Mackoff**, Management Psychologist, will be the speaker for General Session II. Mackoff has observed the pressures of today's international business climate from a front row seat. As a consultant and lecturer, her unique approach to managing stress and increasing productivity is much in demand. Her advice as a consultant in business and psychology has been featured in frequent appearances on television and radio, including "The Today Show," "CBS Morning News," "Hour Magazine," "Late Night America," and "All Things Considered." She is the author of *Leaving the Office Behind* and *What Mona Lisa Knew*, as well as the forthcoming books *The Art of Self-Renewal* (due out in January 1993) and *Lessons from a Caterpillar*. Her research on job-related stress has been featured in *The New York Times*, *The Washington Post*, *Working Woman*, and *The Los Angeles Times*.

## Professional Development Opportunities

The Cincinnati Annual Conference will again offer attendees a wide variety of continuing education courses specifically tailored to the needs and requirements of the profession. SLA is committed to providing professional development programs to meet the needs of both new and experienced special librarians. This year's Conference features more than 20 professional development events, including continuing education courses, the Middle Management Institute, and the Executive Management Program. Choose from a wide variety of topics planned to enhance your productivity.

SLA's professional development programs have earned the reputation among information professionals for high quality programming at a reasonable cost. Take full advantage of your Conference attendance by participating in a professional development program. The following are a listing of tentative titles planned for Cincinnati. Full course descriptions will be listed in the *Preliminary Program* mailed to the full membership in March 1993.

Course titles include:

- Evaluating the Company Library;
- CD-ROM: Local and Wide-Area Networking;
- Copyright Law in the Age of Technology;
- Inside the P.C.: The Basics;
- Mainstreaming the Special Library;
- The Quality Imperative: An Introduction to TQM for Information Professionals;
- Space Planning/Evaluation for Libraries and Business Information Centers;
- Using the Information Audit to Maximize Your Effectiveness;
- Building Quality through Benchmarking;
- Competing Abroad: Acquiring and Using European Information;
- Corporate Library Excellence;
- Developing Expert System Technology to Improve Productivity;

- From Information Manager to Information Designer: Using Multimedia Technology in the Special Library;
- Introduction to Internet: Browsing the Virtual Shelves;
- Linking Strategic Objectives to the Budget;
- Making Money: Fees for Information Service;
- Maximizing Customer Satisfaction; and
- Space Planning/Evaluation for Libraries and Business Information Centers.

**PLAN NOW!** Your participation at SLA's 1993 Annual Conference is beneficial to you and your organization. You will have the opportunity to...

- Learn how the information center will change in the future;
- Discover how you can turn your information center into a profit center;
- Use technology to boost productivity;
- Observe techniques that will help you work better with your staff;
- Meet other special librarians/ information professionals to exchange ideas;
- See how to market your information center inside your organization;
- Learn techniques to work better with top management; and
- Learn how to solve problems in your information center.

Be on the lookout for the *Preliminary Program* booklet in March. Anyone else interested in SLA's Annual Conference should write to Special Libraries Association, Conference and Meetings, 1700 Eighteenth Street, NW, Washington, DC 20009-2508 and request a copy of the *Preliminary Program*.

See you all in Cincinnati! ■



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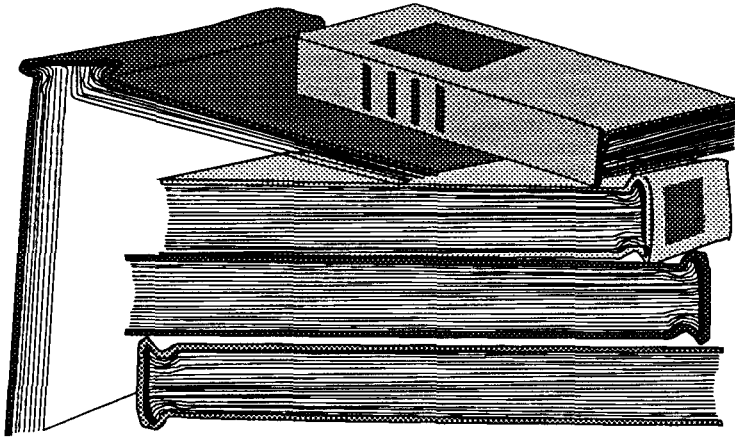
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B. Paid circulation		
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2. Mail subscriptions	15,500	15,857
C. Total paid circulation	15,615	15,972
D. Free distribution by mail, carrier or other means; sampler, complimentary, other free copies	400	400
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F. Copies not distributed:		
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**Maria C. Barry**  
Editor



# Book Review



***The Whole Internet Users Guide & Catalog.***  
Ed Krol. Sebastopol, CA: O'Reilly & Associates, Inc., 1992. 376p. ISBN 1-56592-025-2. \$24.95.

*The Whole Internet Users Guide & Catalog* is the best book so far to introduce what the Internet is all about and to illustrate how to use it. If you want a place to start, this is it. A useful compendium of background facts, resources, and instructions, this book has something to offer everyone from the novice to the experienced user. While his facts are accurate, Krol also captures the spirit of the Internet. If you plan to buy any book on the Internet in the near future, buy this one now; it belongs in all special libraries.

The publisher, O'Reilly and Associates, is noted for high-caliber technical publications on UNIX and networking.

Author Ed Krol brings excellent credentials to this work in that he is the author of "The Hitchhiker's Guide to the Internet," a classic document published on the Internet in 1989 and which is still pointed out as a starting point for new users.

A list of the book's 15 chapters demonstrates how much is covered:

1. "What Is This Book About?"
2. "What Is the Internet?"
3. "How the Internet Works."
4. "What's Allowed on the Internet"
5. "Remote Login."
6. "Moving Files: FTP."
7. "Electronic Mail."
8. "Network News."
9. "Finding Software."
10. "Finding Someone."
11. "Tunneling through the Internet: Gopher."
12. "Searching Indexed Databases: WAIS."
13. "Hypertext Spanning the Internet: WWW."
14. "Other Applications."
15. "Dealing with Problems."

Following the chapters is "The Whole Internet Catalog." Modeled somewhat after *The Whole Earth Catalog* in appearance, it gives a sampling of the interesting things available on the Internet divided into over 50 topics ranging from aeronautics and astronautics to zymurgy.

Three appendices follow the "Catalog." The first is a guide to getting connected, the different levels of service, and who the service providers are. The second appendix provides information on international connectivity, and gives country codes and types of networks in each country. This appendix (dated 1992) is reprinted by per-

mission of Lawrence H. Landweber and the Internet Society and is kept up to date on the Internet. Approximately 230 countries are listed with 107 entities with international network connectivity. Many of the smaller countries have country codes, but no networks are listed. The third appendix includes the NSFNET Backbone Services Acceptable Use Policy released in February 1992. Unfortunately, it is already out of date, since a June update relaxed the Acceptable Use policy further.

The book concludes with a glossary and an index. The glossary is adequate. If you need more terms, get *The New Hacker's Dictionary*, edited by Eric S. Raymond (Cambridge, MA: The MIT Press, 1991). The index is useful and helps the book serve its purpose as a reference tool. A quick reference card on hard stock can be torn out and referred to while at the computer. However, the background picture over which the text is written makes the text almost unreadable. A good idea that needs refinement.

*The Whole Internet User's Guide & Catalog* captures the state of the Internet in 1992. Some of the most useful chapters deal with the "how to" of making use of the various searching tools, ARCHIE, GOPHER, WAIS, and World Wide Web. This book makes the Internet much easier to navigate. Keep in mind that the Internet is evolving and growing, and so this book like any other will necessarily become dated as new searching tools are developed and refined and new resources are added. Very highly recommended.

Other O'Reilly & Associates publications of use to Internet users: !%@:: *A Directory of Electronic Mail Addressing and Networks*. This book is useful if you want more details on getting international connections. The 1990 edition is still in print but very out of date now; wait for its updated version expected by the end of 1992.

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**Reviewed by Hope N. Tillman, Director of Libraries, Babson College, Babson Park, MA, and Chair of the SLA Networking Committee.**

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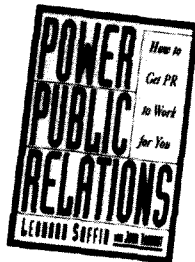
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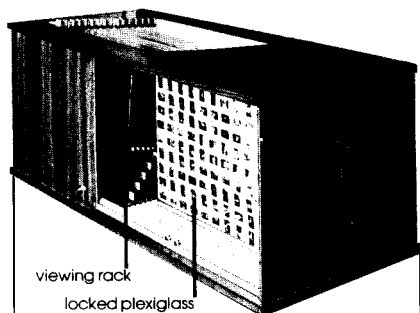
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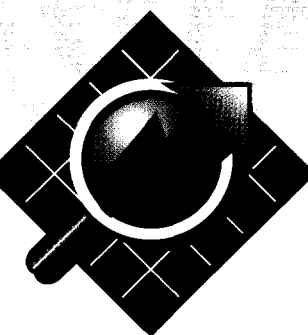
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